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Army and Navy Waging Duel Over Rights to Same Warplanes

Inventory

IT IS now seven months after Pearl Harbor. What is the score on air power?

There is progress, but the program has been inordinately slow.

We are in a war of movement and transportation. It is an air war requiring air power and quick shipments of men and materiel. It is a war of fast communication.

But as yet there is no overall, planned, and intelligently-directed national air policy by air-trained men. The fundamentals of air power have not yet been fully integrated into national administration or the war productive effort.

Despite the greater voice and greater recognition granted to airmen in the general planning, the dominating factors in planning are still dictated by ground-trained chiefs with no conception of air power beyond perfunctory (and often reluctant) lip-service to the airplane.

The gap between public thinking, assumptions, and official pronouncements on the role of the airplane, and the actual dominant thinking of the brass hats who make the decisions, is still very wide, although the gap has been narrowing as a result of actual war events. An artillery man trained in Civil War strategies and 1918 fighting, is still an artillery man refusing to

(Turn to page 39)

Why Navy Wants Landplanes



Navy Men Inspect A20s, Pray for More



Army Planes Battered This Jap Cruiser

Land-Based Craft Emphasized in New Navy Plans

By ROBERT H. WOOD

SHOCKED by the stellar role played by medium and heavy land-based bombers in the Pacific battle area, the Navy Department is revising its entire aircraft procurement program, with a marked emphasis on landplanes.

But the change remains on paper to a large degree because the Army has a tight grip on the landplane production for the next two years and so far has shown little inclination to divert its supply to the tardy Navy. The Army has a long-range program of its own which would be dislocated by any sharp increase in Navy demands for the same types of craft.

Another development in recent months which makes the Navy's need for heavier landplanes imperative is the disastrous submarine campaign along our coast lines.

A few Douglas A-20 bombers have already been made available in recent weeks, according to the Navy's own announcement, but the supply is a mere dribble, and there is a titanic

(Turn to page 10)

Official U. S. Navy Photographs



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U. S. Starts Transport Revolution-George

Army Ferrying Chief Sees Big Cargo Future

AMERICA is leading the world in a revolution of transportation which is changing the course of the war and the future beyond it, says Brig. Gen. Harold George, commanding general of the consolidated Air Transport Command of the Army Air Forces, "the world's largest airline."

The veteran air officer in a press conference at the announcement of the reorganization of the ferrying command struck out at the cynics who are pooh-poohing the practical value of flying cargoes.

"In time of war the test is to get material and men to a given area before your enemy," he said. "Under such circumstances, it is not 'cheaper' to transport by water, or any other way. Any means of transportation is too expensive if your supplies arrive too late."



Gen. George

transportation is too expensive if your supplies arrive too late.

Unlimited Use

"I can see unlimited use for cargo planes and gliders, now and in the post war period. I don't think there is any question that the war will do for aerial freight what the last war did for the development of highway trucking."

"The last war may be said to have given birth to aviation; this one will give impetus to air commerce on a grand scale."

Even the present estimates of two years' time for construction of huge aircraft now on the drawing boards seem too long to Gen. George. The American aircraft industry, he pointed out, already has done and is doing in months what a year ago would have been gauged in years.

Answering criticism that this country has neglected development of gliders, the officer asserted that, "We are now very far along the road and you can be sure we are not far behind the Germans. We shall need thousands of gliders and glider pilots, he said. One Douglas can about double its carrying capacity with two gliders, with only a sacrifice of about 12% in range."

Four engined, long range carriers (Douglas C-54) already are coming

Will Aid Expansion



International News Photo

First Flight Strip: Located somewhere on the Middle Atlantic Seaboard, the nation's first flight strip was formally opened July 1 by the Army Air Forces and the Public Roads Administration of the Federal Works Agency. The strip is 8,000 ft. long and over 500 ft. wide, with a runway 7,000 ft. by 150 ft. paved with concrete eight inches thick. It is capable of handling the largest AAF bombers, and was completed 15 days ahead of the contract schedule of 75 days. Studies have been completed on about 80 additional sites, and construction already has begun on several of them. Note the different types of equipment in the photo, ranging from a lightplane to a four-engined bomber.

off the lines, and "bigger and bigger cargo planes are coming."

In absorbing the Army's other air ferrying and cargo services, including TWA's Intercontinental Division and Pan American Airways' African routes, the Air Transport Command's route mileage becomes nearly twice the distance around the world. The domestic service alone is larger in pilots, planes and bases than the entire Army Air Corps was four years ago. Eventually, Gen. George said, the ATC "will become 10 times greater than all of the peacetime airlines in the world."

Only the rate of expansion of the aircraft industry can control the growth of the Army's air system, its commanding general asserted. He praised the nation's airlines for maintaining a nucleus of aircraft and pilots.

"We shall use all available planes and facilities, although we shall never be able to fly the total tonnage which will be needed in war. Our armed forces naturally prefer to use an agency which can move vitally needed materials in four days over a route requiring four months by any other medium."

Agreeing with designers like Glenn Martin, who see no technical limitations on size of aircraft, Gen. George asserted that it is ridiculous to believe that anything which can be transported by ground means cannot be carried by air.

The general's press conference was held one afternoon late in June in his office in the Air Transport Command's new building across the Potomac from Washington, adjoining National Airport. A world map fills one entire wall, but the general apologized because the sweeping lines in red were not accurate. But only a short space in the middle east lacked a red line denoting a scheduled operation. Even this area, however, is traversed frequently by ATC aircraft.

The 49-year-old air transport chief entered the Army in 1917 as a Cavalry officer but transferred a few months later to the Aviation Section of the Signal Corps as a private. He was commissioned a second lieutenant in aviation in 1918, and underwent advanced training at an AEF bombardment school in France.

Between 1921 and 1925 he served at Kelly Field, Langley Field, and Aberdeen Proving Ground. He

"Aviation Pilots" New Navy Rating

ENLISTED FLIGHT students are now graduated from the aviation training courses at the U. S. Naval Air Station, Pensacola, Fla., as "aviation pilots," in accordance with recent changes in ratings by the Bureau of Naval Personnel.

The rate of "aviation pilot" distinguishes enlisted men who, for the most part, will be manning the Navy's big multi-motored patrol planes. These men are rated as chief aviation pilots, or aviation pilots first, second or third class depending on the rating held when they received their wings.

Enlisted flight students who enter training direct from the fleet or shore stations after passing strict physical and mental requirements, today comprise approximately one-fourth of the students at Pensacola, the only naval air station offering flight training to enlisted men.

The training is identical to that given cadets and student officers. Sailors attend ground school classes for the first five weeks of training before going to the primary squadrons at either Corry or Sauflay Field, two of the station's auxiliary fields. After the elementary points of flying have been mastered, and the student is checked as safe for solo, he goes to Squadron 3 at Chevalier Field on the main station for instruction on instrument flying first in the Link Trainer and then "flying under the hood."

Having become proficient in the art of flying blind, the sailor moves to Squadron 2 at Ellyson Field to learn additional aerobatics with heavier and faster planes. Successful completion of these basic training courses sends him to Squadron 4 for intensive training in the handling of the huge patrol boats, the planes he will fly after receiving his aviation pilot's wings.

was in the Operations Division, Office of the Chief of Air Corps, from 1925 to 1929, later going to Hawaii as commander of a bombardment squadron, then as a student to the Maxwell Field Air Corps Tactical School, where later he taught courses in bombardment aviation. In his fourth year at the school he was director of the Department of Air Tactics and Strategy.

Since 1935 he has studied at the Command and General Staff School at Fort Leavenworth and has commanded the 96th Bombardment Group, GHQ Air Forces, and 2d Bombardment Group. In July, 1941, he was assigned to duty with the Headquarters Army Air Forces as Assistant Chief of the Air Staff for War Plans, being placed in command of the Ferrying Command Apr. 1, 1942.

11 Billions Voted For 23,550 Warplanes

148,000 Army Craft To Be Built in 1942-43

AN \$11,316,898,910 Air Forces allocation—providing for procurement of 23,550 aircraft—carried in the 1943 War Dept. Appropriation bill has been approved by Congress and the President.

High Army officials report that aircraft factories under contract to the Army will produce in 1942 and 1943 at least 148,000 planes—the Army's share of President Roosevelt's 185,000 plane goal for those two years.

Lt. Gen. H. H. Arnold reported "unprecedented Air Forces expansion in 1942" in training and procurement with "comparable expansion now under way in navigator, aircraft, gunner, radio operator, bombardier, and maintenance technician training". A greatly expanded technician training program scheduled for Dec. 31, 1942, Gen. Arnold said, will be attained about 6 weeks ahead of schedule.

Six Items

The \$11,316,898,910 for the Air Forces is to be allotted under six heads (one of which has not been revealed):

(1) Procurement of 23,550 airplanes, including standard complement of spare engines and spare parts;

(2) Procurement of additional spare parts in compliance with the combat requirement findings of the Joint Aircraft Board;

(3) Procurement of a pool of supplemental Government - furnished equipment to act as a cushion in which the shocks of unexpected drains and production delays may be absorbed so as not to delay delivery of combat aircraft;

(4) Defense air operations, covering primarily the operation of the Ferrying Command, training of pilots and navigators for other nations, operation of operational training units for the British and maintenance of various military missions;

(5) Operation of Civil Air Patrol. (Gen. Arnold claims that initial tests in use of existing civil aviation facilities wherever possible have been sufficiently encouraging to warrant further extension of CAP operations. The Air Forces reimburses OCD, of which CAP is a part, for services. CAP planes are used in courier service, patrol

service, Anti-sabotage patrol of power lines, pipe lines, etc. and for border patrol.)

Gen. Arnold and Maj. Gen. O. P. Echols informed Congressmen of War Dept. plans to increase aircraft parts and unit purchases under a new program to establish reserves at strategic points throughout the world. The new Air Forces policy is the result of a recent study made by the Joint Aircraft Committee composed of members of the Army Air Forces, the U.S. Navy, the Royal Air Force, the British Air Ministry, and the WPB.

Spare parts and spare units necessary for efficient operation will be determined on a percentage basis for each type and model of airplane, with an individual percentage for each part, according to the nature and purpose of the part, as shown by experience in the theater of operations, and at training facilities. Specific percentages required for particular spare units or spare parts will run from 10% to 500%.

Gen. Arnold reported: "Aircraft spare parts and replacement assembly requirements in this war have greatly exceeded all early estimates . . . Extensive combat operations in widely separated areas, heretofore considered inaccessible, have greatly increased the distribution factor in computing spare parts requirements . . . Spare parts reserves must be located in strategic locations all over the world . . . Aerial action and

flying equipment required for such aerial action may be shifted between points 2000 miles apart overnight . . . It takes weeks to shift the maintenance parts over such a distance . . . Since maintenance parts are absolutely a prerequisite to sustained operations, sufficient over-all supply of parts must be made available to the Air Forces to permit spotting strategically limited amounts of such parts with respect to the various probable areas of action."

High Army Officials testifying before the House and Senate Appropriations Committees inform representatives that:

(1) The Army will have a strength of 4,500,000 men by the middle of 1943. Lt. Gen. Brehon B. Somervell said the Army's goal of 3,600,000 men by Dec. 31, 1942 had been "materially increased";

(2) Youths of 18 to 20 who enlist now are being trained for combat duty. Maj. Gen. J. T. McNarney, Deputy Chief of Staff, said the Army knows that in certain assignments those youths "make the best soldiers";

(3) The Army is planning for mass evacuation of wounded by air, a system successfully used by the Germans;

(4) Offensive, rather than defensive, gas warfare is getting the major attention of the Chemical Warfare Branch of the Army;

(5) Part of the need for Air Forces officers will be met by increasing the strength of the West

Point Cadet Corps from 1807 to 2440 men next year. Hereafter all cadets will be eligible for aviation training;

(6) Army aviation contractors have returned, or are in the process of returning, about \$23,000,000 to the government as a result of renegotiations.

Comparisons

Aviation lead in House debate on the \$42,000,000,000 War Dept's largest appropriation bill in history. Statements made on the floor included:

Rep. Snyder (D., Pa.) Chairman of the sub-committee on War Dept. of the House Appropriations Committee: "Our whole bill for military aviation in World War I was \$608,865,307 . . . From July 1, 1939 to July 1, 1941 expenditures actual and estimated, on account of military aviation by the War Dept. aggregate approximately \$35,710,000,000 . . . The amounts for aviation under heads other than 'Air Forces' would bring the aviation allocation in the 1943 War Dept. bill to about \$20,000,000,000."

Rep. Powers (R., N. J.): "The Air Forces started out with 1800 officers and about 40,000 men, and right now they have about 18,000 officers and 540,000 men and before the conflict is over, the Air Forces will constitute one of the greatest branches of our armed forces . . . Pilot training is progressing in grand shape . . . They started out with a 7000-pilot program and eventually that will be 70,000 . . . The mechanical program is also progressing nicely and will eventually comprehend 300,000 mechanics."

Moves to Commerce Dept.

RESIGNATION of Robert H. Hinckley as Assistant Secretary of Commerce for Air and appointment of William A. M. Burden as Special Assistant to the Secretary of Commerce were announced in Washington July 7.

The White House statement on Hinckley said the President accepted the resignation, effective July 1, "with extreme reluctance," and Hinckley was praised especially for the "unprecedented safety record," the expanded airport program and the Civilian Pilot Training Program. Hinckley will join Sperry Corp.

Burden will serve, without compensation, on matters relating to Civil Aeronautics Administration, Commerce Secretary Jones said. Burden is being transferred from Defense Supplies Corp., where he was vice-president in charge of the American Republics, Aviation Division. Before going to Washington he was with National Aviation Corp.

Founder of one of the country's finest private aeronautical reference libraries, Burden will bring to the Commerce Dept. an excellent prac-



W. A. M. Burden

tical background in many phases of aviation.

Alaska Route

Rep. Van Zandt (R. Pa.): "The Army has been allocated nearly \$125,000,000,000, with which it is expected to eventually build an army of from 8 to 10,000,000 men and women . . . including an Air Force of 2,000,000."

Rep. Case (R., S. D.): Gen. Sturdevant informed the Appropriations Committee that the War Dept., in selecting the route for the construction of the Alaskan Highway, was concerned with supplying air fields along the established ferry route."

Rep. Randolph (D., W. Va.), reprimanding the Army for not making use of available CAA pilot training facilities, for training only 13,350 men with these facilities when it had earlier laid down a program for training of 45,000: "The civilian pilot-training program of this country is training only 27,000 men who later will go into combat flying, but the operators have facilities to train 180,000."



The Birdmen's Perch

WE WISH TO DISCLAIM any responsibility for the creature (?) you see on this page.



This fluffy fugitive from a gilded cage seems to have hatched out from a drop of Gulfpride that splashed on the page while we wrote. From the looks of it, it's not even soloed yet, despite all the pretty trimmings. Furthermore, it behaves as though it's planning to make The Perch its home 'port. We suppose that out of common decency we ought to give it a name.

Better yet—YOU give it a name! Something like "Oscar Octane" or "The Gashawk."

C'mon, gang, christen this bedraggled derelict. And if you've any tips for pilots that you had to learn the hard way, send 'em in and we'll have the Oily Bird tell the rest of the fellows about it.

Major Al Williams

alias, "Tattered Wing Tips,"
Gulf Aviation Products Manager,
Gulf Bldg., Pittsburgh, Pa.

MAPPERS OF THE

COLD, COLD GROUND

More than ¾ of the area of the United States have been photomapped from the air. To make an aerial map requires the fitting together of thousands of pictures. Yet almost ¾ of each vertical photo is thrown out.

Due to lens curvature and other factors, the sides of the film strips are distorted. A map would be useless if these parts of the pictures were used. By eliminating

them, cartographers make the photos do a better job.

An oil refiner has much the same problem. Crude oil contains various non-lubricating materials which make it useless for modern close-tolerance engines. By refining the crude, most of these carbon makers and sludge formers are thrown out. Eliminating them makes the oil do a better job of lubrication.

At Gulf, we use a special refining procedure called the Alchlor Process. This method of refining "throws out" more of the non-lubricants from Gulfpride. It "trims the edges" so thoroughly that Gulfpride does a **BETTER**, better job of lubrication.

It makes a dollar do a better job, too.

THIS MONTH'S BRAIN TWISTER

(Censorship permitting)

Whenever it rained in the afternoon, at a certain airport, it was fine in the morning. When it rained in the morning, it was fine



in the afternoon. Over a period of time it rained 7 days, was fine on 5 afternoons and 6 mornings.

How many days does this cover?



OIL IS AMMUNITION



USE IT WISELY!



TUNE IN "WE THE PEOPLE" AT WAR. SUNDAY NIGHT 7:30 EWT COLUMBIA NETWORK

THIS MONTH'S WHOPPER

Dear Major:

A while back, you mentioned a tailless plane without a fuselage. It seemed like the wrong approach to a good idea. A wing is bound to contribute drag. I tried to solve the problem of drag a different way. I made a tailless plane without a wing. And Major, it was a blue-streak whiz-z-Z!

But wouldn't fly.

I dispensed with the fuselage, leaving



only the controls. THEY wouldn't fly. I got rid of the controls. That left just me.

And I wouldn't fly—

Remembering some of your fantastic stories about Gulf Aviation Gasoline, I got some. I put some on the fuselage, some on the controls, and I drank some.



Now we all fly! Independently or assembled!

Fast, too.

"Great-Circle" Gribbin, Mount Kisco, N. Y.

Gulf Oil Corporation and Gulf Refining Company...makers of



GULF AVIATION PRODUCTS

WPB Summary

AN ALLOCATIONS COMMITTEE has been set up by WPB to review PRP applications, and to supervise assignment or preference ratings and distribution of materials. Chairman of the Committee is Henry P. Nelson, who has been assistant chief of the Bureau of Priorities in charge of requirements. Other members are from the Division of Civilian Supply, Materials Division, Bureau of Industry Branches, Bureau of Priorities, Requirements Committee, and Army-Navy Munitions Board.

PLASTICS MOLDING MACHINERY has been placed under General Limitation Order L-159 which states how and to whom such machinery may be sold.

JAMES S. KNOWLSON, Director of the Division of Industry Operations has been named Deputy to Donald M. Nelson on the Combined Anglo-American Production and Resources Board.

FEWER QUESTIONNAIRES from Washington to manufacturers is expected to result from formation of a WPB committee to study all government questionnaire forms. All duplicating inquiries and unnecessary forms will be abolished. In most instances questionnaires now out will continue in force until October 1.

ADDITIONAL INFORMATION on all WPB and OPA actions may be obtained by writing or wiring the Press Release Distribution Room, Office for Emergency Management, 1501 Social Security Bldg., Washington, D. C., or from the particular division or branch responsible for various orders. Regional offices should soon be able to give faster and more complete information than Washington on most inquiries.

TOP PRIORITY RATINGS have been changed by provision for establishment of ratings AAA, AA-1, AA-2, etc. which take precedence over A-1-a. Form PD-4X is prescribed for issuing reratings, and provision is made for extending orders for rerated materials.

CHINA NATIONAL AVIATION CORP. has been granted a blanket A-1-a priority rating by WPB for purchase of construction and maintenance materials and equipment.

AIRPLANE TIRES are subject of a regulation setting new schedule of specifications, expected to save 750 tons of rubber a year.

War Agencies Review

CHANGES IN WPB PERSONNEL and policy are expected to have little or no effect on the Aircraft Branch of WPB, or on the aircraft industry. The new set-up, which is expected to eliminate earlier conflicting action on priorities control by making WPB accountable only to the very highest military planners, may improve rather than hurt the aircraft priorities situation. Both the Air Forces and the Bureau of Aeronautics are represented on the Army-Navy Joint Board, while there was no aviation representation on the once-powerful Army-Navy Munitions Board.

OPA'S EFFORTS TO REGULATE PRICES in the aircraft field are being balked by industry protests over what is termed dangerously inadequate OPA provision for letting prices go up when wages go up. Further consideration of the proposals which OPA has submitted to the industry may be delayed until more definite progress is noted toward aircraft wage stabilization. There is mounting criticism in Washington, directed more at the White House and Congress than at OPA or other agencies, over refusal of the administration to take a positive stand on some form of wage control. It is felt that other anti-inflationary measures, until wages and raw material prices are under control, will become increasingly difficult to manage.

ABLE DESIGN ENGINEERS, a number of Washington people feel, should be relieved of military work by aircraft and engine manufacturers in order to speed progress toward more efficient postwar commercial planes. Contention is that this country after the war will badly need cargo and transport planes with one-half to one-third of today's high operating costs, and that the industry should put a few of its best men to work toward equipment which will enable airlines to cut deeper into the volume of goods which lower rates would permit moving by air.

WAR MANPOWER COMMISSION, after weeks of issuing numerous press releases without saying much, is getting organized toward becoming what its name suggests. In doing so, however, WMC has caused some concern and confusion among other Washington agencies as to what position it will hold in deciding such issues as wage stabilization, draft deferment, labor union activity, etc.

The Manpower Commission, in issuing its recent list of occupations essential to war production, states that this does not mean there will be no separate lists for separate industries. Thus the list of key aircraft occupations, prepared by Selective Service System in cooperation with industry committees, will probably go out to local draft boards more or less in its original form although WMC has delayed it "for consideration" over a period of several weeks.

TRANSPORTATION FACILITIES for war workers are expected to be easier to get as Washington recognizes the importance of having workers on the job on time. Several recent moves should make it easier for aircraft plant workers to get favorably action from their local rationing boards.

The Army Air Forces has asked that service stations in the rationed area give preference on their limited stocks of gasoline to war plant workers.

Office of Price Administration has set up procedure whereby workers in plants employing more than 100 men in war production may apply for new Grade II tires through special committees to be appointed in plants to consider such applications.

OPA Briefs

GASOLINE FOR LIGHTPLANES will be rationed in the eastern area under the new gas rationing program into effect on July 22. Owners are required to sign up for coupons in the same manner as for cars. Reason is that lower grades of aviation gasoline can also be used in cars.

BICYCLE STOCKS frozen some time ago by OPA will be released on a rationed basis to war plants for messenger service, and to war workers who use them getting to and from work. Local rationing boards will pass on eligibility of applicants.

A LABOR OFFICE has been set up by OPA to work with its new Labor Policy Committee in dealing with other government agencies on matters where labor and wage considerations might clash with OPA efforts to maintain price ceilings. Heading the Labor Office is Robert R. Brooks, on leave from Williams College and a former teacher of industrial relations at Yale. The Labor Policy Committee is composed of spokesmen for OPA, and for CIO, AFL, and the railway labor groups.

SUBPOENA POWER has been granted to OPA regional directors for investigation of violations of price and rationing regulations.

IRON & STEEL Price Schedule No. 1 has been amended to provide (1) the producers of iron and steel products file data on conversion and processing charges; (2) uniform rules for application of extras and other charges on cold finished steel bars and shafting.

FABRICATED ALUMINUM products price reductions will not go into effect until August 1, instead of July 1.

BUYERS OF STEEL CASTINGS may be charged above ceiling prices if producer is forced to pay abnormal freight costs on shipments occasioned by emergency circumstances.

JOBBER AND DISTRIBUTOR under recent amendments to the General Maximum Price Regulation come under the definition of wholesalers for purposes of determining maximum prices.

MANY AIRCRAFT ITEMS have not yet been placed under price ceilings due to lack of accord on the proposed overall aircraft regulation. (Story on page 6)

WPB Aircraft Salaries: Personal Background

A list of WPB officials with salaries over \$7,500 includes the following men in the aircraft branch:

Fred W. Ayers, associate chief, Aircraft Branch, \$8,000.

Born: November 13, 1884.

Education: Private tuition, mechanical engineer.

Experience: Benton Stone, Ltd., director, 1937-37; Samuel Booth, Ltd., managing director; Damler Motor Car Co., managing director, 1938; United States Government Ordnance Department, private production engineer, 1940-41.

Harold R. Boyer, Aircraft Branch, \$8,000.

Born: February 25, 1899.

Education: Wittenberg College, general engineering, 1916-19; Massachusetts Institute of Technology, 1919-22, B.S.

Experience: Fisher Body Corporation, construction engineer, 1922-25; General Motors, plant engineer, 1925-29; Allen Corporation, president and general manager, 1929-41.

Thomas Carroll, Chief of Engineering Section, Aircraft Branch, \$8,000.

Born: September 17, 1890.

Education: Georgetown University, 1915-20, LL.B.

Experience: Jacobs Airplane Engine Co., vice-president and general manager, 1929-30; Management & Research, Inc., partner, 1931-33; Kellett Autogiro Co., technical adviser, 1933-37; Tuscar Metals, Inc., president, 1937-39; Midwest Aero Manufacturing Co., executive and operations vice-president, 1940-41.

William C. Lawrence, chief specialist on aircraft, \$8,000.

Born: May 9, 1911.

Education: Georgia Technological Aeronautics, 1932, B.S.

Experience: American Airways, Inc., mechanic, draftsman, 1932-34; American Airlines, Inc., supervisor, assistant chief engineer 1934-41.

Richard E. Palmer, head engineer on aircraft, \$8,000.

Born: January 28, 1907.

Education: University of Michigan, aero engineering, 1930, B.S.

Experience: Verville Aircraft Co., aero engineer, 1930; Stinson Aircraft, assistant chief engineer, 1930-31; Curtis Aero, aero engineer, 1931-38; Lycoming Division Aviation Manufacturing Co., sales manager, 1938-41.

Carlton E. Stryker, chief coordinator on aircraft, \$8,000.

Born: June 1894.

Education: University of Michigan, 1916, B.S.

Experience: Doble Steam Motors, assistant specialist engineer, 1923-24; East Bay Water Co., chief electrolysis, 1924-28; W. J. Waterhouse, partner, 1928-33; Vultee Airplane, designer, 1933-34; Curtiss-Wright, chief engineer, 1934-38; Bendix Aviation, chief engineer, 1938-40; Society of Automotive Engineers' technological staff representative, 1940-42.

Edwin E. Walton, chief specialist on aircraft, \$8,000.

Born: December 23, 1907.

Education: Massachusetts Institute of Technology, 1928, B.S.

Experience: Curtiss Airplane analyst and designer, 1928-30; Curtiss-Wright Corporation, project engineer, 1930-36; Curtiss-Wright Corporation, technical adviser, 1936-41.

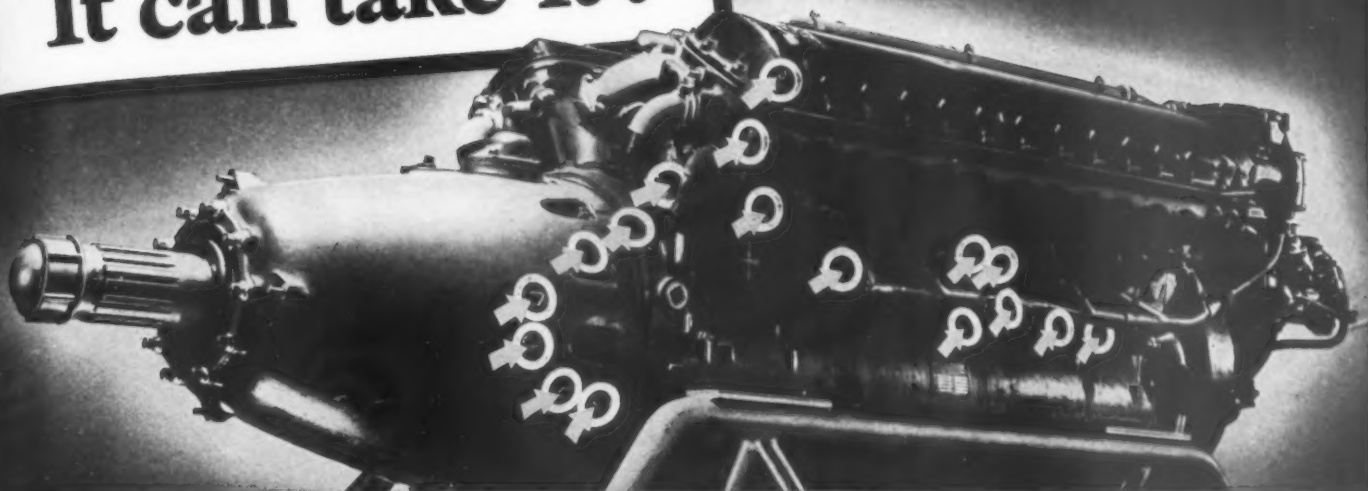
Theodore P. Wright, head engineer on aircraft, \$9,000.

Born: May 25, 1895.

Education: Lombard, 1915; Massachusetts Institute of Technology, aero engineering, 1917, B.S.

Experience: United States Navy, chief quartermaster, Engine, United States Naval Reserve Force; ensign, lieutenant, (junior grade), 1917-21; Curtiss-Wright, chief engineer, division general manager, director engineering, 1921-40.

It can take it!



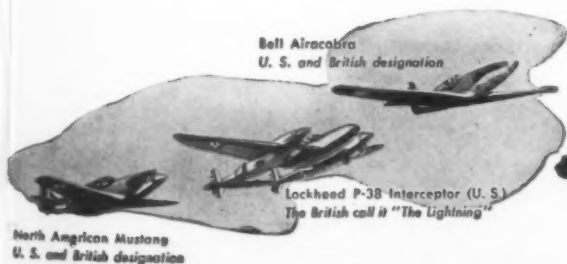
Here is positive evidence of the Allison engine's ability to survive an Axis dogfight—to take a hail of lead and keep flying. Punctured in seventeen places, this engine carried its plane and pilot back to safety at an R. A. F. air base in Libya. This engine, later returned to this country and now in the "Arms For Victory" Exhibit of General Motors in Detroit, gives dramatic proof that when the Nazis shoot up an Allison they can't count on shooting it down.

It can dish it out!



Curtiss P-40 (U. S.) The British call it the Tomahawk or the Kittihawk

Qualitative superiority counts! From Africa, the Middle East, the South Pacific, Russia, the communiques report that nothing in the Axis air armada can match the sharp-nosed fleetness of this liquid-cooled engine. It's a matter of record that predates Pearl Harbor, how Allison-powered planes can dish it out.



LIQUID-COOLED AIRCRAFT ENGINES

Allison

DIVISION OF



OPA Moves Slowly on Aircraft Price Control

Long Awaited Amendment To Price Regulation No. 136 Sidesteps Aircraft Field Controversy

LONG anticipated action by the Office of Price Administration toward price regulation for the aircraft industry took a short step forward recently when OPA announced amendments to Maximum Price Regulation No. 136 on Machines and Parts.

The step was not entirely one of clarification for the aircraft industry, since the amendments do not include price ceilings for aircraft, engines and parts as was originally intended by OPA.

They do, however, set ceilings for instruments, electrical equipment, industrial machinery and other items purchased by but not manufactured by the aircraft industry; and they set a pattern which is expected to be followed by OPA in attempting to exercise price control over an increasingly large proportion of the nation's war implements.

Whether or not this pattern can be maintained by OPA depends, observers feel, on the manner in which the amended regulation is accepted. In its earlier form, there were many provisions to No. 136 to which industry, and the Army and Navy, made strong objections. Not all of these provisions have been removed, but an attempt has been made to make the Regulation more generally acceptable.

Avoids Cost-Plus

Although the scope of the revised Regulation is somewhat broadened, it contains an element of flexibility which should simplify its application among such a wide variety of industries as it is intended to cover. Particularly noteworthy is the removal of provisions for price control on cost-plus-fixed-fee contracts, which OPA originally intended to regulate.

The revised Regulation covers this very briefly by stating, "cost-plus-a-fixed-fee contracts are exempted from the Regulation pending further study by the Office of Price Administration."

With respect to coverage and price basing dates, the amended Regulation makes the following changes and additions to the earlier measure:

(1) It sets forth a long list of specific machines and parts, and provides that maximum prices for them shall be no higher than those charged on October 1, 1941.

(2) It sets forth another list of machine parts and provides that their maximum prices shall be no higher than those charged March 31, 1942. These two lists include the complete coverage of the Regulation.

(3) For purposes of clarification, the Regulation contains an illustrative list of products not covered by Regulation No. 136, but which are covered by other specific OPA regulations.

(4) It provides March 31, 1942 as the basing date to be used in determining maximum prices for

machinery services and subcontracting, and includes a number of services previously a part of the General Maximum Price Regulation.

OPA's statement issued with the order includes the following remarks:

"In the Regulation as amended the 'base date' for all machinery services is March 31, 1942. The 'freeze letters' previously sent to machinery manufacturers by the OPA, requesting them not to exceed October 1, 1941 price levels, did not reach most machine shops, so that in many cases their rates had advanced. In addition, machinery service suppliers were known to have had some labor rate increases between October and March which they would have found it difficult, and in many cases impossible, to absorb because of the high proportion of their costs accounted for by direct labor cost. Most important, it was felt desirable to include, within the scope of the regulation, certain machinery services other than machine work, such as testing, inspecting, maintaining, repairing, and rebuilding machines and parts. For all of these reasons, the maintenance of the October 1, 1941 base date in this field was considered to be unwise.

"As a corollary to this change, the pricing formula for manufacturers of special machinery who make use of outside machinery services was modified so as to allow the use of the actual rates paid not to exceed the maximum allowable rates, instead of the rates in effect on October 1. Thus the 'farming out' of certain operations will be encouraged rather than discouraged.

"Like the machinery service suppliers, most manufacturers of parts and subassemblies as such, many of whom had been completely exempted from the original regulation, are subject to a March 31, 1942 base date under the Regulation as amended. Parts and subassemblies generally, along with certain tools and accessories, now appear in the category of specifically named machines which carry the later date.

Doolittle Raiders Blast Tokyo With 20-cent Bombsight

Uncle Sam's famous Norden bombsight has yet to test its mettle on a Tokyo target, it was revealed in Washington simultaneously with the decoration of the 25 officers and three enlisted men who participated in the now famous bombing raid.

The hitherto unpublished detail of the raid came to light when citations called attention to the fact that every member of the raiding force anticipating being shot down and rather than risk having a Norden bombsight fall into Japanese hands, all the participating planes were stripped of the prized secret weapon—and a 20 cent substitute took its place.

In general, only parts which were brought under informal price control in the fall of 1941 and the early months of 1942 remain in the list of specific machines basing maximum prices on October 1, 1941. In this category are parts made by the manufacturers of the complete machines which are covered, and certain specific items where subcontracting was of little importance.

"In the case of parts and subassemblies, as well as manufacturing services, manufacturers of special machinery are no longer required to use October 1, 1941 prices for such parts as they buy in calculating their own maximum prices, but may enter these parts at their actual prices, not to exceed OPA maximums."

Pricing Formula

Where the manufacturer does not have established list prices, provision is made for computing maximum prices under the following formula:

1. The price-determining method which was in use on the price basing date, applying the overhead rate, machine hour rates, if any, or other bases of computation which were in use on that date;
2. Labor rates in effect on the price basing date;
3. Materials prices in effect on the price basing date with some exceptions;
4. Actual prices paid or to be paid for subcontracted machinery services, not in excess of maximum prices provided by the Regulation as amended;
5. Freight rates in effect on Mar. 31, 1942;
6. If sold on an installed basis, labor rates in the area of installation in effect on, or agreed to or

(Turn to page 16)

Separate Regulation Drafted For Most Aircraft Items

ALMOST simultaneously with publication of amendments to Maximum Price Regulation No. 136, OPA sent to major aircraft companies a draft of proposed measures for price regulation throughout the aircraft field.

The 16-page proposal, although it had undergone frequent changes and revisions during weeks of preparation was not altogether intended as the last step before publication of a formal regulation for the aircraft industry.

In sending out the draft, OPA asked industry spokesmen to attend conferences in Los Angeles and in Washington at which OPA and the industry could thrash out provisions which the industry strongly felt might hamper war production or of proportion to price control benefits.

It was expected that the results of these conferences, plus other considerations brought up informally, would be used by OPA in drafting its final order.

Industry Balks

However, before the conferences were more than under way, negotiations were halted by industry insistence that better provision be made for absorption of wage increases into prices. In Los Angeles it was decided to postpone further discussions until some direction was established at aircraft wage stabilization conferences starting in Los Angeles July 6th. Those who appeared for the Washington meeting expressed the same feeling toward inadequate provision for labor costs, stating that until OPA, or other government agencies, moved to hold wages and prices on the same plane, price control measures in war industries would fail to be effective.

Provisions of OPA's draft presented for industry consideration are summarized below. It should be kept in mind that these proposals are preliminary and that various conditions doubtless will be changed.

Definition: For the purposes of this regulation, the term "aircraft and aircraft subassembly & part" means any airplane or glider for combatant or non-combatant use, any lighter-than-air craft, any aircraft engine, and any subassembly or part of the foregoing which is sold for use thereon. Examples given include propellers, turrets, windshields, windows, doors, bulkheads, wing panels, wing tips,

(Turn to page 14)



Shake hands with the Octopus

This machine packs a punch. Packs 19 of them at once, in fact. And each one is backed up by 3600 pounds of hydraulic pressure.

Night and day the "octopus" punches V-shaped slots in the circumferential stiffeners—circular aluminum alloy members—that brace a mighty bomber—the Boeing Flying Fortress.*

Designed by Boeing tool engineers especially for high production slotting and cutting of airplane stiffeners, this

machine turns out parts *forty-five* times as fast as the machine which it replaced.

The "octopus" is one of the reasons why Boeing is building airplanes more quickly than ever before. It is another link in the lengthening chain of Boeing contributions to increased speed and efficiency in airplane production.

And production is steadily rising. . . . Since December 7, for example, Boeing engineers, production men and airplane workers have more than

doubled the output of Flying Fortresses. Today the Boeing hydro-punch, together with many other Boeing developments in quantity production, is being shared with other aircraft companies, helping them help the United Nations to do the job in hand.

The increase of speed and efficiency in manufacture . . . both for war and for peace . . . is only one of the many different projects that form a constant part of Boeing production engineering.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS

BOEING

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE-MARKS

IN THE DAILY

Washington's Bible Too

"American Aviation Daily has proved to be a very wise investment as it has condensed the vital information that I do not have time to glean from other services and newspapers, and in some cases far in advance of the same information published in any other medium.

"Also outstanding are well thought-out items legislative trends from the average operator's or manufacturer's view. This service was recommended to me by Congressman Jennings Randolph . . .

That's what a new subscriber wrote us this past fortnight about the *Daily*. And he lives in Washington, D. C.!

In fact, circulation of the *Daily* in the Nation's Capital is almost as large as that in New York City. And that's a lot of *Dailies*.

American Aviation Associates' big news staff (largest in aviation journalism) considers this faithful Washington readership an outstanding compliment, as well as a challenge.

Demand is so heavy for the *Daily* at WPB's Aircraft Branch each morning that one high official sent in a personal subscription to save a chase around the office sometime every afternoon looking for the current issue. One of Donald Nelson's liaison officers concerned with aircraft, subscribed on his own, too.

CAA has recently added a new subscription, as has CAB. One of the first moves of an OCD aviation office staff, finding no *Daily* coming in, was to chip in for it. Army's Air Transport Command, staffed by former airline officials who had the AAD habit, forwarded a purchase order on the first day of the new fiscal year, July 1.

Other agencies who report mass-use by staff members of the only daily in aviation include the RFC, Defense Supplies Corp., Air Forces Materiel Division, WPB Library, offices of Army and Navy assistant secretaries, and aviation services in the Navy, to report only a few.

The British scan AAD every morning in several offices, as do officials of other Allied governments.

Still more regular readers are those with airlines and airline attorneys, Air Transport Association, Aeronautical Chamber of Commerce, Automobile Manufacturers' Association, National Aeronautic Association, and Washington representatives of a score of manufacturers.

These people know Washington, can pick up a phone and talk to any official, are meeting constantly many of the people who are making aviation news, yet they buy *American Aviation Daily*, and keep buying it month after month, because they know it is doing a comprehensive, careful job of news coverage which cannot be duplicated in Washington. It's their Aviation Bible!

If Washingtonians say it's indispensable, imagine how valuable it will be to you. Samples are free. Write to American Building, Washington, D. C.

—R. H. W.

Army and Navy Waging Duel Over U. S. Warplanes

(Continued from page 1)

struggle raging between top officers of the two services that probably will be decided only at the White House.

In its statement revealing acquisition of the A-20s, which so far has received almost no notice in the press, the Navy tells in its own words why it is in desperate need of medium and heavy land-based craft:

"These powerful lightning bombers," it says, "will be used to protect shore bases, will strike heavy blows at sea units, and can effectively fight off any carrier-based pursuit ships."

That is the story.

It is the same story that Rear Admiral Towers, the Navy's air chief, has been telling the battle-ship admirals for a long time. This is the first instance, however, in which they have done much listening.

Heretofore, they have hidden behind the catch phrases that "No airplane has ever sunk a battle-ship," and "We are ready."

First Guns

First official notice of the beginnings of the conflict appeared in recently-published hearings before House and Senate appropriations subcommittees. Rear Admiral Ezra Allen, Navy budget officer, admitted the Bureau of Aeronautics has been "unavoidably delayed" in obligating 1942 funds in its aviation appropriation because "agreement has not yet been reached between the Army and Navy on the furnishing by the Army of 1300 planes urgently needed by the Navy."

These planes are being constructed on Army contracts in which the Navy "wishes to share, to save time in letting new contracts, producing new types, etc."

The Admiral further revealed that:

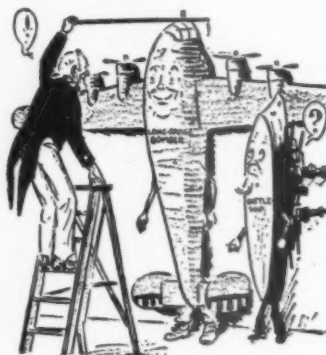
"The Navy has very extensive airplane orders, placed with the Army, which will probably not get into final contract form by June 30, 1942."

Admiral Towers also reported "difficulties" in connection with obtaining planes through the War Department.

" . . . We have been unable to obligate all of our contract authorizations, principally because of delays in arrangements with the War Department for the large numbers of aircraft that they procure for us.

"That involves a transfer of funds, and they do not have all of the financial details worked out and cannot say just exactly how much these airplanes are going to cost

'Growing Up Fast'



©-mack in Christian Science Monitor.

us, and it does not look as though we will get the bill from the War Department until later in the next fiscal year."

The bill, of course, will depend upon how many planes the Navy will be permitted to get from the Army's orders.

Asked to explain the Navy's orders more fully, Towers said:

"These Army contracts are in no case for carrier-type, or ship-borne type of planes; they are for training planes . . . and for a limited number of long-range multi-engine landplane for use under special conditions, and special geographical locations."

Since these early orders, it is understood the Navy has upped its demands on the Army for planes of Army types.

Towers explained to Congressmen that the two services have "worked together" on procurement for several years. Previously little friction has been encountered because the services were concentrating on different plane categories.

But it is the aircraft procured by the Army which have been turning in magnificent performance records in every major battle the two armed forces have had to fight in the Pacific.

And the Army put through capacity orders to the manufacturers months ago which have very nearly shut out the Navy completely.

If the Army is permitted by the President to keep most of the aircraft it has contracted for, Washington observers see little likelihood of the Navy's receiving any appreciable quantity of landplanes for months.

The only alternatives appear to be either plant expansions, which will take precious time, or one other alternative (which many think is the only answer) which is worrying the top Navy officers night and day: The haunting spectre of a separate Air Force, controlled mainly by the officers now guiding the Army Air Forces.

British Reveal Real Status of Royal Air Force

Popular U. S. opinion that this country in the last 12 months has been making tremendous contributions of planes, tanks and other implements of war to the British Isles received a courteous but factual upset in Washington early this month when England's new Minister, Harold Beresford Butler made his first public address.

Highlights of the talk by Mr. Butler, also Director General of the British Information Service, revolved about his disclosures regarding English factory production throughout the span of the war, which, he said up to this date had actually surpassed both Germany and the United States in the manufacture of warplanes.

In other weapons Minister Butler declared the British "probably go pretty near" the German volume.

American-made warplanes, imported to England in the last 12 months totalled 1,243, he said, adding that the British Isles during that period sent 9,781 from her plants to other theaters of war.

For every tank imported, the British were sending to the front lines 15, built in English war factories.

"In spite of our late start and all the difficulties caused by bombing and blackout . . . we were actually producing considerably more war material than the whole United States.

"In the last few weeks your production has overhauled ours. At your huge industrial machine get into top gear, you will outstrip us and the more you outstrip us the better we will like it. But you may be sure we shall not relax our effort for a moment."

Tankers To Become Two-Purpose Ships

NAVAL TANKERS will soon be serving a double purpose according to plans released by the Navy Dept. revealing installation of specially designed deck facilities to accommodate crated deck cargoes. This is the first time that such innovations for the transportation of crated aircraft and other types of military material have been incorporated in the Navy's tanker construction program.

Marine Air Bases

Selection of two sites in California for the construction of U. S. Marine Corp Air stations has been approved by the Secretary of the Navy, according to official announcement. The localities chosen for the new establishments are El Centro and Santa Barbara, Cal. Each will be used as an operational training base for Marine Corps flyers.

There are three Marine Corps Air stations now in operation, at Quantico, Va., Cherry Point, N. C., and Parris Island, S. C.

POWER

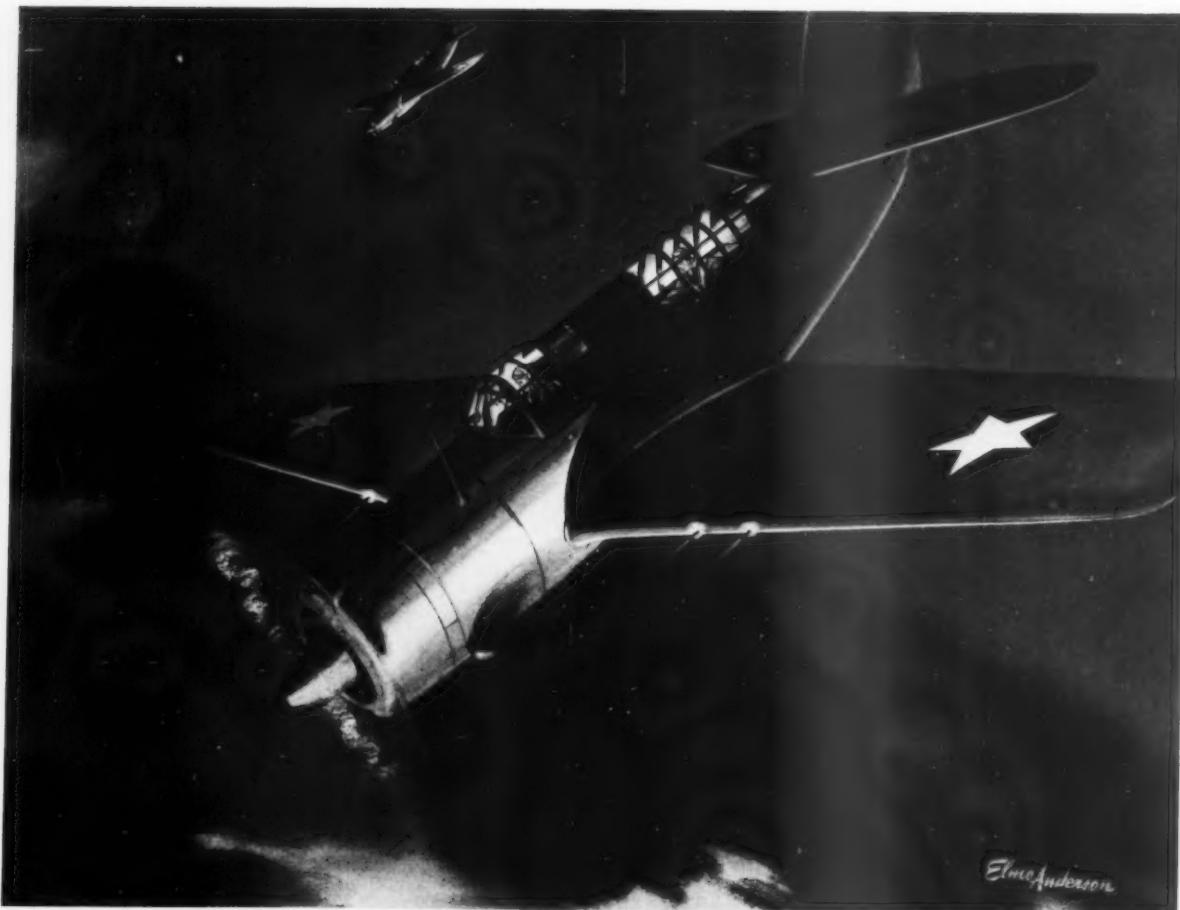
for Tonnage Transport



Tonnage of the future will go by air—men and materials reaching any part of the world in the least time, at the lowest ton-mile cost. Wright's unequalled research and production will provide engine power for the coming sky-giants.

WRIGHT *Aircraft Engines*

POWER THE TONNAGE OF THE AIR



Curtiss dive bomber SB2C-1 fabricated with Boots Self-Locking Nuts.

HOW BOOTS NUTS SPEED PRODUCTION AND REDUCE COSTS FOR CURTISS

Just as "a penny saved is a penny earned," so a man-hour saved today is one more step in our common all-out production effort.

Curtiss-Wright was quick to grasp the labor saving opportunities afforded by the adaptable Boots Self-Locking Anchor Nut.

The Boots Anchor Nut supplied with dimpled rivet holes was adopted by Curtiss-Wright to save many valuable man-hours per airplane in the construction of the SB2C-1

and SO3C-1 over previous available methods.

The release of important machinery, the elimination of operations, the saving of factory space and man power and precious minutes for other work means much to Curtiss in their race against time.

In addition, Boots Self-Locking Nuts are considerably lighter, and offer permanently safe protection against loosening due to vibration and other causes.

BOOTS

Self-Locking Nuts For Application In All Industries



Cutaway of Boots Anchor Nut with dimpled rivet hole. Boots Anchor Nuts are made of sheet metal. They are available with rivet holes for 78° or 100° rivets. Write for new catalog today.

BOOTS AIRCRAFT NUT CORPORATION ★ NEW CANAAN, CONNECTICUT

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Specialist Corps Swamped; Few Selected

1089 Airmen Are Requested By Gen. Arnold

By ROBERT H. WOOD

DON'T expect quick action on your application in the Army Specialist Corps.

The competition will be terrific and the mill will grind slowly for a while. Furthermore, up to a few weeks ago only 10,000 officers and some 500 specialists had even been requested.

According to latest official reports, only 50 to 100 men have been appointed, although the President's executive order creating the Corps was issued in February.

Swamped by more than 200,000 applications already, the Corps is simplifying procedure and hopes to commission at least 500 officers for the Army Air Forces and appoint about as many more specialists for the Air Transport Command in the middle east. But these figures depend upon the way the war goes.

Dwight Davis, recently appointed director general of the ASC (soon to be a major general), tells Congressmen that he expects his machinery to move into high gear shortly, and he anticipates also a jump in the demand for ASC men.

Many Rejects

Even if both of these developments come about, however, thousands and thousands of applicants will be rejected or, more likely, their applications will simply lie idle in files.

The President established the Corps to obtain qualified civilians for the War Department, for administrative, professional, scientific or technical services. Main purpose is to release military personnel for combat or command duties.

Number and composition of appointees will be determined by the Secretary of War. Their service will expire six months after the Armistice, or sooner if so provided. The Corps can act only upon requisition of one of the arms, services or agencies of the War Department.

Appointment will not be made if it will result in release of a civilian now performing the duty unless the agency requesting the man can show that the position should be filled by a commissioned officer.

To be appointed are officers (second lieutenant through colonel) and specialists of 1st to 5th class. Appointments below second lieutenant will in most cases be for operations outside continental United States.

Appointment does not alter appointee's liability for military service under Selective Service System.

Individual qualifications for initial appointment will be based upon the education, training, and experience of the applicant in related fields of effort and his general fitness to fill the position.

In general, men will not be appointed if (1) they have draft classifications of 1-A-O, 1-B-O, 4-E, or 4-E-LS; (2) they are under 30, unless permanently disabled physically for general military service; (3) they are over 30 and under 45, with 1-A draft classification; (4) they are deferred from induction for occupational reasons and should not, in opinion of Selective Service, be released for the Corps.

Applicants will have to compete not only with the papers filed for the Army Specialist Corps but with every other available and qualified man who is registered with Civil Service Commission, U. S. Employment Service, Roster of Scientific and Specialized Personnel, "or any other source." The Roster alone has 250,000 names on its list, although many of these men are on war jobs already and would not leave them.

The Department, in other words, says it is after the best possible man for the vacancy which exists. Many Washington observers, however, believe that the complexity of the problem will ultimately force the Army to concentrate more and more on ASC applications if appointments

are to be made in a reasonable time. Extensive revamping of the entire system of selection for simplification and speed is also forecast. Perhaps these reforms will come shortly, perhaps not before autumn.

In applying for admission to the Corps, the applicant now fills out a placement questionnaire which goes to the Adjutant General's office, as does also every other application for the Regular Army. Here the blanks are scrutinized by officers of the Army and the Corps, who decide whether the applicant should be considered by the Army or ASC. Applications retained for the ASC are classified and codified and remain on file until a requisition is received from some branch of the War Department. If the requisition and the application list the same qualities, the applicant may be appointed. The final choice, however, is made by the branch, perhaps from several names which have been sent to it. These other names may be of men on Civil Service or U. S. Employment lists, or on the Roster. After appointment, and the oath is administered, the commanding officer of the unit (Regular Army) will decide whether the new officer will wear an ASC uniform.

In general, minimum physical standards will be the same as those for draft classification 1-B, limited military service. In a few cases waivers will be granted.

Positions to be filled by the Specialist Corps include the following:

Administration, purchasing, procurement, supply, personnel managers, public relations, fiscal and clerical administration, appraising, mechanical tabulation, all classes of engineering, physics, electronics, meteorology, navigation, law, statistics, writing on military or defense subjects, aviation and pilots, photography, drafting.

Also: inspections, laboratory operation, mechanical trades, motion pictures, machine shop builders and operators, road building, control of transportation and traffic (rail, motor, air, water), communications control, morale activities, aircraft warning, blackout and other air raid precaution.

Rank and Pay

Titles and base pay rates for officers follow:

Second lieutenant, \$2,600-\$3,500; first lieutenant, \$3,200-\$3,800; captain, \$3,500-\$4,600; major, \$4,600-\$5,400; lieutenant colonel, \$5,600-\$6,400; colonel, \$6,500-\$7,500; deputy director, \$8,000-\$9,000. Director General Davis will receive a maximum of \$9,000. Those receiving more than \$4,500 will be subject to Presidential appointment and Senate confirmation.

Titles and base pay for regular specialists, showing the Army rank to which they correspond:

Fifth class (corporal), \$1,800-\$2,160; 4th class (sergeant), \$2,000-\$2,600; 3d class (staff sergeant), \$2,300-\$2,900; 2d class (technical sergeant), \$2,600-\$3,200; 1st class (master sergeant), \$2,900-\$3,500.

Other classes of specialists will also be set up with salaries equivalent to the prevailing rate of wages of U. S. citizen artisans, mechanics, or technicians performing the same class of work as that performed by the member of the Corps.

In addition to base pay, certain allowances for subsistence and quarters will be provided.

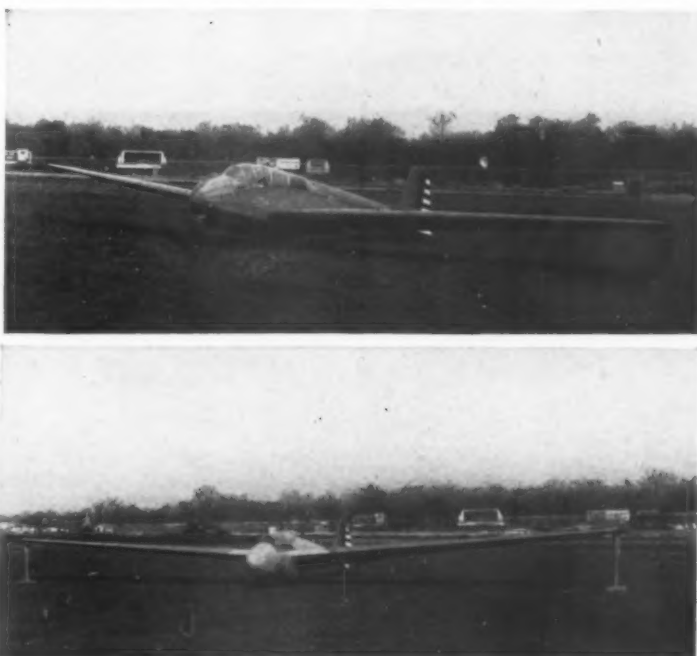
Promotions will be made by the Director-General upon recommendation of chiefs of arms or services, solely on merit and needs of the service.

In the last procurement request made public, dated June 6, the various military branches had requested 10,607 officers and 525 specialists. The Air Forces asked for 564 officers, 64 of them for the Air Transport Command in the middle east. The 525 specialists were also requested for the middle east ferrying project. Gen. Arnold seeks 25 colonels from the Corps, 50 lieutenant colonels, 75 majors, 100 captains, 125 each of first and second lieutenants. The middle east wing seeks 5 lieutenant colonels, 26 majors, 8 captains and 25 first lieutenants.

Largest requests for officers are made by these military divisions:

Transportation, 2,168; Engineers, 2,144; Signal Corps, 1,754; and QMC, 1,493. Public relations seeks only 6; military intelligence, 22.

Applications are available from Army Specialist Corps. Washington, D. C., or through Corps Area Headquarters of the Army.



Official Photographs U. S. Army Air Forces

Army's New Gliders: These two training gliders have been accepted for production by the Army Air Forces, the War Dept. announces. Both are two-place tandem gliders. The wings, fixed and movable control surfaces are of wood construction, fabric covered. Fuselages are of welded steel tube construction, also fabric covered.

OPA Aircraft Proposals

(Continued from page 8)

ailerons, flaps, empennage, landing gear, nacelles, cowlings, controls and control cables, instrument panels, oil pressure and hydraulic control systems, de-icer and anti-icer systems, fuel tanks and systems, fixed seats, lavatory equipment, gun loaders and feed and ejection chutes, bomb racks, and subassemblies and parts of the foregoing.

Exclusions: This Maximum Price Regulation shall not apply to: (a) any sale or delivery of an aircraft subassembly or part or any manufacturing service for which a maximum price is established by any other regulation or order issued by OPA except the General Maximum Price Regulation. (b) "Arms and material" incorporated into the structure of the aircraft or carried in such aircraft. Appended list of such exceptions includes "small arms, machine guns, cannon, bombs, torpedoes, pyrotechnics, primers, fuses, boosters, grenades, bomb-sights, navigating and calculating equipment, cameras and photographic equipment, metal snaps, and tools for tool kits. (c) Unfabricated or semi-fabricated lumber, paper, textiles, or other products in such form as to permit their uses for other purposes than as aircraft subassemblies or parts. (d) Sale, delivery or manufacturing service performed pursuant to a developmental or secret contract. (e) Sales or manufacturing services made or performed outside the continental United States, except that export sales shall be subject to Maximum Export Price Regulation.

Price Determination: The maximum price for each sale and delivery by the manufacturer of any aircraft or aircraft subassembly or part to any purchaser shall be computed on the basis of the following: (1) labor rates in effect on March 31, 1942, provided, that if any wage increases were negotiated prior to April 27, 1942, labor rates as so increased may be used; (2) actual material prices paid or to be paid, including the prices paid for manufacturing services, not to exceed maximum allowable price; (3) the price determining method which was in use as of March 31, 1942, applying the overhead rate, machine hour rates, if any, or other bases of computation which were in use on that date. If no such method was in use on that date, the manufacturer shall use the method which would have been used on that date.

For the purposes of this subparagraph, the method of determining the total price in a cost-plus contract shall not be deemed to be a "price-determining method"; (4) freight rates in effect March 31, 1942 for outbound shipments for the mode of transportation actually used, and for inbound shipments for the mode of transportation actually used from the actual point of origin; (5) all applicable extra charges (including emergency service charges, discounts (including customer discounts), and other al-

lowances in use on March 31 to a purchaser of the same class.

Reports: If the price of any aircraft or aircraft subassembly or part computed in accordance with the provisions of this Section is at any time increased above the price charged on a previous sale or delivery, or is increased above the original contract price by renegotiation or by a price adjustment clause, unless the increase is definitely assignable to a change in specifications or a change in the conditions of delivery, the manufacturer thereof shall file the report required by OPA.

New Plants: In the case of new or converted plants unable to determine prices by the method provided above, a proposed price is to be made by the manufacturer based as closely as possible on the above pricing considerations, and submitted to OPA with all relevant data for approval or disapproval.

Subcontracting: The above terms are intended to apply to all manufacturing services performed by persons other than the manufacturer where all or part of the material used is furnished by the manufacturer.

Jobbers: Sales by sellers other than the manufacturer, such as jobbers and distributors, shall be at maximum prices determined by applying to the seller's net invoiced cost, not in excess of the applicable maximum price, the average percentage margin over net invoiced cost realized on or about Mar. 31, 1942. Where no comparable sale was made on or about that date, the seller is to establish a proposed price and submit it to OPA for approval.

Cost-Plus: No provision relative to such contracts is made in the present draft. "It is the position of the Office of Price Administration that pricing under such contracts should be in accord with the terms of this proposed regulation. Study of the technicalities of such contracts is being made. Before taking action . . . we wish to discuss the problem with the industry."

Export Sales: The proposed regulation provides that maximum prices for all such sales be determined according to the Maximum Export Price Regulation.

Renegotiations: Detailed provision is made for price changes resulting from new contracts, renegotiations of contracts, specification changes, etc. Generally, it is provided that no upward revision may be made without agreement between contracting parties and application in writing to OPA stating factors involved and requesting approval of increase.

Records and Reports: Requirement is made that records be kept, open and available to OPA, showing all sales with full description of transaction and price; cost factors in effect on Mar. 31, 1942; and purchase and cost records showing calculations of factors entering into transactions under the Regulation.



"Careful With Those Bayonets, Men!"

Flying Battleship 'Mars' Completes Initial Flight

WITH KEN EBEL, vice-president of the Glenn L. Martin Co. at the controls, the giant 70-ton flying battleship "Mars" took off from the waters of Chesapeake Bay July 3 on her maiden flight, an event which culminated five years of work on the part of her Baltimore builders.

Sitting beside Ebel, who also is in charge of the Martin engineering department, were Capt. Harold Gray of Pan American Airways and Co-Pilot Ellis D. Shannon. The big ship remained aloft for 25 minutes on its initial flight, which was witnessed by high Navy and government officials, including Brig. Gen. James H. Doolittle.

In spite of her size—the Mars has a wing spread of 200 feet—her builder, Glenn L. Martin, declared the big battleplane would not make an easy target for enemy craft. "She cannot be shot down unless her wings literally are shot off," he declared, and he added that the ship was "more formidable than the battleships of the present day. A few shells through the Mars would make no difference. Not only is she armored, but she carries a greater gun power than the ships attacking her would be able to use."

Comdr. Clarence H. Schildhauer of the Naval Air Transport Service, after witnessing the test flight declared the Mars was the type of ship needed in great numbers to help solve transportation problems now and in the future.

No difficulty whatever was experienced during the trial and observers noted that the ship cleared the bay and was in the air within 30 seconds after Pilot Ebels opened the throttle. Eighteen men were aboard for the initial flight—a mere handful compared to the capacity load of 150 passengers, plus a gas

cargo sufficient to carry the ship to Europe and return. The ship has a two-deck hull, 117 feet long and is powered by four 2000 hp engines and her normal gross weight is 140,000 lbs.

After additional test flights in the following week, the Mars was scheduled to be officially delivered to the Navy at Norfolk, Va.

Navy to Open Two New Technical Schools

TO EXPEDITE the Navy's vast aviation ground-training program the Navy Dept. has authorized the construction of two new aviation technical schools, to be located at Memphis, Tenn., and Norman, Okla. When completed, each of these huge centers will have facilities to train 10,000 men every six months.

Enlisted personnel with technical background and abilities will be assigned to the centers, and classes will start at once for the training of such specialists as aviation mechanics, metalsmiths, ordnancemen, radiomen, photographers, aerographers, and bombsight mechanics.

Augmenting facilities at similar schools already in operation at Alameda, Cal.; San Diego, Cal.; Seattle, Wash.; Chicago, Ill.; Dearborn, Mich.; Jacksonville, Fla.; Pensacola, Fla.; and Norfolk, Va., the two new centers are designed to provide technical personnel in sufficient numbers to keep pace with the increased production of naval aviation equipment.

Mass Production

The Army Air Forces' concentrated training program, now in full force in three different schools, is turning out aerial gunners "by the hundreds" for the U. S. combat aircraft, according to the War Dept.

We're signing this pledge

By Thousands

**TO HELP AMERICA BUILD A
PLANE EVERY 8 MINUTES**



Pledge of the Aircraftman

To the end that American war plane production may reach the rate of one every eight minutes or a total of 60,000 for 1942—

To the end that there not be "too little, too late" on the battle fronts where our fighting men are offering their lives for the preservation of my country—

I solemnly pledge my full support to the great objectives of the Joint Labor Management Production Committee of Goodyear Aircraft Corporation.

Robert Murn ★

HOW GOODYEAR AIRCRAFT CORPORATION SERVES THE AIRPLANE INDUSTRY

1. By building parts to manufacturers' specifications.
2. By designing parts for all types of planes.
3. By re-engineering parts for mass production.
4. By extending our research facilities to aid the solution of any design or construction problem.

FOREWORD: In April a Joint Labor-Management campaign was launched at Goodyear Aircraft Corporation in cooperation with the War Production Board's drive to attain the President's goal of 60,000 warplanes this year. Its slogan: a plane every 8 minutes will put the Axis behind the 8-ball. The following advertisement, published in Akron papers, tells how Goodyear aircrafters responded.

THINGS have been happening fast here at Goodyear Aircraft since the big "Plane-Every-Eight-Minutes" rally a few weeks ago.

Telling us how we could help put Adolf, Hirohito and Bennie behind the 8-ball has given us a real mark to shoot at.

Thousands have signed the Aircrafter's Pledge to do their best to help America produce 60,000 warplanes this year—a plane every 8 minutes.

Every pledge was signed voluntarily, the American way.

Suggestions for bettering our work, eliminating bottlenecks and saving materials are pouring in, too—50, 60, 70 and more every day. Many of them so good, it's going to be mighty hard to pick the Grand Award Winners.

And it's inspiring to see the daily work-progress thermometers many assembly crews have put up on their jigs, to show how far ahead of schedule they are.

You'd get a kick, too, from the slogans everybody is contributing for the "Nippo-Nazi Say" posters all over the plant. Bull's-eye bell-ringers like "Stay out late with Mama, please Yokohama" — or "Make more scrap, no hurt Jap."

That's the spirit out here at Goodyear Aircraft. We're on the march, making every minute count more in doing our share of the work necessary to deliver a plane every eight minutes—to make America first in the air.

For we know that until our airmen rule the

skies, neither life, liberty nor pursuit of happiness will be secure in this world again.

We repeat, this is our war, too — and as soldiers of the production line, we're pledging our finest effort to help win it.

Berlin, Rome, Tokyo papers, please copy.

JOINT LABOR AND MANAGEMENT COMMITTEE

W. E. Fowler, A. C. Michaels,
Co-Chairmen



Max. Price Regulation 136

(Continued from page 8)

announced on or before Apr. 27, 1942 for labor required for installation, or, where the wage stabilization agreement issued May 22, 1942 between the Building & Construction Trades Department of the American Federation of Labor and certain agencies of the U.S. is operative, labor rates in effect on July 1, 1942.

In the formula for calculating maximum prices for special machinery or machinery services, it is provided that allowance may be made for overtime estimated to be required, and in addition, that overtime over and above the amount estimated may be passed on if the purchaser agrees. The only restriction is that the 'base-date' rates shall be used, and that no 'mark-up' or profit is added to the bonus wages paid. The freight rate requirements have been modified so as not to discourage the securing of materials from distant points or by more rapid and expensive modes of transportation.

A new section allows the addition to maximum prices of certain 'emergency service charges,' both in the case of list-price items and special items. For example, if a manufacturer finds it necessary to secure steel from a warehouse so that a vital part may be produced on rush order under emergency conditions, the additional cost may be passed on, provided it is billed separately.

Provision has been made in the regulation as amended for a group of exclusions which originate in the necessities of the arms program of the U.S. Excluded from the regulation's provisions are secret U.S. Government contracts in which the nature of the commodity produced is not disclosed—for military reasons. Also excluded are developmental contracts and subcontracts in which experimental and developmental work might be seriously jeopardized by the application of price controls. Emergency purchases by the Government for immediate delivery are also exempt from price control.

Classifications

The order lists the following major classifications and sub-classifications of machines and parts to which the Oct. 1, 1941 date is applicable. Only sub-classifications of probable interest to the aircraft industry are included here.

- (a) Prime Movers;
- (b) Industrial and Marine Power Apparatus;
- (c) Processing Machinery and Equipment: (chemical processing machinery; die-casting machinery; foundry machinery; plastics molding and fabricating machinery).
- (d) Construction and Mining Machinery;
- (e) Electrical Equipment; (airways lighting; welding equipment; capacitors; carbon, graphite and metal graphite products for electrical uses; circuit breakers; conduit fittings; industrial heating units and devices; power conversion and

rectifying equipment; wire, cable, and cable accessories (except when subject to Revised Price Schedule No. 82); feeder voltage regulators; flood lighting equipment; fuses; industrial and marine electrical lighting equipment; instruments for measuring electrical quantities; magnetos; metallic outlets and switchboxes; metallic and non-metallic ducts; panel and distribution boards; special electrical metals and alloys; transformers, including specialty transformers).

(f) Railroad Equipment:

(g) Auxiliary Equipment: (air-conditioning equipment (25 tons capacity or over; furnaces and ovens, industrial; metal marking and numbering machines; material handling equipment, industrial; refrigerating equipment (25hp or over).

(h) Miscellaneous: (elevators and conveyors; fans and blowers (including domestic hot air furnace fans), except pedestal, portable and ceiling household and office fans; gas welding and cutting equipment; mechanical instruments, for measuring, testing, recording, or indicating, including aircraft, marine, scientific, laboratory, and precision instruments; weighing scales, industrial and platform).

(i) Miscellaneous Parts and Sub-assemblies: (anti-friction bearings; bi-metallic thermal strips, fabricated; chains, sprocket, and roller and silent; ferrous forgings, all types, as sold by the forger (whether machines or rough); galvanometer and pyrometer movements; gears, pinions, sprockets, and speed reducers (except when subject to Revised Price Schedule No. 105, as amended); industrial clockwork systems used in connection with mechanical instruments; industrial power transmission equipment belt tighteners and shifters, clutches, couplings and collars, hangers and brackets, motor bases, pillow blocks and bearing housings, pulleys and sheaves, universal joints, variable speed drives; springs for mechanical instruments).

Items to which the Mar. 31, 1942 date is applicable include all parts and subassemblies on the above list which are manufactured by a subcontractor or person other than the manufacturer of the complete item; other items not included in the above list but coming under the definition of "Industrial Machinery" except such items as are specifically excluded from the Regulation; and the following miscellaneous items:

Miscellaneous: (brushes, industrial power-driven; chucks, mandrels, collets, and machine tool attachments; dies, molds and patterns (when sold separately and delivered); gaskets and packing; ground steel stock for punches, dies, jigs, fixtures, etc.; jigs and fixtures; machine knives, machine shear blades, and power driven saw blades; perishable (expendable) tools; porcelain and steatite insulators; radio transmitting and receiving apparatus).

Mechanic Training Contract Enlarged

UNDER a new War Department contract, training of a "large number" of Army Air Forces personnel as specialized airplane mechanics will begin soon at United Air Lines' Boeing School of Aeronautics.

The program calls for an extensive 15-week course to turn out aircraft overhaul mechanics, aircraft repair and overhaul mechanics and aircraft sheet metal mechanics. Prospects for three classes are being selected from regular enlisted men in Army camps throughout the country.

Under an earlier contract with the Army, Boeing school agreed to train enlisted men as all-around service mechanics during a six-months course. The second contract calls for specialized training of the additional men and classes will be completed in approximately 15 weeks.

New Dive-bomber 'Tops', Navy Says

U. S. NAVY authorities in Washington have revealed the successful maiden flight of their new Curtiss-Wright Helldiver, said to be the most powerful of all U. S. dive-bombers.

The Helldiver, a two-place mid-wing monoplane with retractable landing gear, is described by Curtiss-Wright officials as being capable of carrying a bigger bomb load faster and farther than any dive-bomber now in service. The plane is designed to operate from either carrier or land bases.

Whitney in Air Forces

Resignation of John Hay Whitney as director of the motion picture division of the office of the Coordinator of Inter-American Affairs has been announced by Nelson A. Rockefeller, coordinator. Whitney has been commissioned a Captain in the Army Air Forces.

Gen. Stratemeyer Is Chief of Staff Army Air Forces

Maj. Gen. George E. Stratemeyer, described by the press as the man who was "there when the cornerstone of air power was laid," has taken over his new post in Washington as Chief of Staff of the Army Air Forces.

Formerly in command of the Air Forces' Southeast Training Center, Maxwell Field, Ala., Gen. Stratemeyer succeeds



Stratemeyer

could not be made public at this time.

Gen. Stratemeyer, then a young infantry lieutenant just out of West Point, had himself transferred into the Army air arm when it wasn't even a separate organization—just the aviation section of the Signal Corps. Months before the air arm had become important enough to warrant the distinction of being called the Air Service, Lt. Stratemeyer was promoted to the rank of Captain. He's been in there since and at the close of World War I was holding the rank of Colonel.

During his command over the Southeast Training Center, Gen. Stratemeyer had some 40,000 future pilots training for their wings.

Shell Man Is Captain

W. H. Eaton, Jr., general sales manager of Shell Oil Co. Inc., now on military leave of absence, recently received his commission as a captain in the U. S. Air Forces. He is now stationed at Montgomery Field, Ala.

Air Force Moving D. C. Offices

SEVERAL DIVISIONS of the office of the Chief of the Army Air Forces are involved in transfers to other locations in Washington and vicinity.

The Military Personnel Division of the office, which was located in the Maritime Bldg., 18th and Pennsylvania Ave., has been moved to Gravelly Point, as has been the Flight Surgeon's office. Also transferred to the Gravelly Point location is the Publications Division, which has been quartered in the Munitions Bldg., and the newly organized Air Transport Command which was located in Temporary Bldg. M.

The Flying Training Command, headed by Maj. Gen. B. K. Yount, has moved its headquarters from the Maritime Bldg., Washington, D. C., to Fort Worth, Texas. Col. Luke Smith in charge of Individual Training, will represent the Flying Training Command as liaison officer in Washington.

Army Air Forces Public Relations Division which has been located on the third floor, first wing of the Munitions Bldg., has been moved to the seventh floor of the Maritime Bldg.

British Women Fill Gaps In Nation's War Effort

AFTER two and one-half years of war, British Overseas Airways Corp. is employing women in skilled and semi-skilled positions to a degree unheard of not so long ago.

Women are employed not only in connection with BOA's flight operations, but are also used extensively in the factories which the company has established for overhaul, reconditioning and repair of aero engines and aircrews for the RAF.

In one of these factories the manager has stated that he hopes later to employ 90% women labor.

As a result of AMERICAN AVIATION's story (Feb. 1) on the part being played by women (God bless 'em) in U.S. airline operation, the press officer of BOA has sent from London a complete story and pictures to prove that the British have not been laggard in recognizing feminine talents.

Whereas U.S. women have been employed mainly in reservations and sales work and only recently began to break into the more technical side of aviation, British women have for some time been engaged in work on engines, aircrews, etc.

According to the BOA press officer, "those employed by, or in connection with, the merchant air service range from women architects, who work out the detailed designs for factory extensions, air raid shelters, and many other kinds of buildings, to young girls in overalls who spend long days helping to strip and overhaul aero engines and propellers."

"They vary from tracers and teleprinter operators, typists and office workers to the smart young women in dark blue uniforms who drive motor transport vehicles or work as traffic clerks, and who will

soon be seen at the airports—they are already working at the London terminal—attending to passengers, helping and advising them on the rules and regulations concerning tickets, passports, visas, medical certificates and the other many incidentals to war-time travel.

"Women are being used with outstanding success as map draughtsmen. In the map section of the operations department I found 20 women, all of them trained to this specialized work since the outbreak of war, and I was told they had prepared no less than 5,000 special maps to be carried by the aircraft captains . . .

"Speaking of accuracy, I discovered in Miss L—the only woman computer in the corporation. In three months she has been trained to compute without any difficulty at all the time of sunset and sunrise in any part of the world, the duration of twilight, the various averages of air speed and height, and, more difficult still, to make a reliable wind analysis. Miss L—used to be an income tax official."

In the factories doing RAF work, the following jobs are now listed "for intelligent girls: (1) fabric workers (very skilled); (2) bench fitting (filing of small metal parts, cutting, etc.); (3) sub-assembly of propellers and aero engines (final adjustment and test by men); (4) women viewers (a job with responsibility); (5) stripping and cleaning of propellers and aero engines (moderately skilled); (6) balancing propellers (a job done in a special test house, involving much skill owing to fine limits of balance)."

In six months an intelligent young girl is quite capable of managing one skilled operation unaided, according to BOA.

Revitalized Ferrying Command

The Army June 26 set up the Air Transport Command which, effective July 1, took over the former duties of the Air Forces Ferrying Command; Air Division of the Transportation Service, Services of Supply; and Cargo Division, Air Service Command.

The new ATC will be responsible for:

- (1) All air transport and civil air carriers, including priorities, except those under jurisdiction of the Navy.
- (2) Ferrying of all aircraft to destinations throughout the world.
- (3) Transportation by air of personnel, material and mail for all Army agencies.
- (4) Control, operation and maintenance of establishments and facilities on air routes outside the U. S., which are or which may be the responsibility of the Commanding General, Army Air Forces.

The Command, in thus centralizing and unifying its foreign and domestic wings, makes Pan American Airways' trans-African and TWA's Intercontinental Division operations subject to militarization. Informed sources in Washington last week indicated that for the present TWA's charter service would not be militarized. TWA personnel have been in charge of all flights, down to the plane crews. Gen. George, ATC commanding officer, said Pan American's African personnel may be militarized gradually. Few Army officers are now on ferrying assignment in the "Dark Continent."

The unit formerly known as the Air Transport Command in the Army becomes the Troop Carrier Command. It is not under Gen. George. Its mission is to transport tactical forces in the rear of enemy concentrations, including air borne infantry.



Airpower Did This: A view of what was a Japanese heavy cruiser of the Mogami class. U. S. carrier-based naval aircraft pounced on the vessel in the battle of Midway and reduced it to a burning wreck. Shortly thereafter, Congress provided funds for 500,000 more tons of carriers, and soft-pedaled battleship construction.

CPT Achievement

Director John P. Morris lists as CPT's achievement record since its inception 3½ years ago:

1. The training of 72,000 men through the elementary course (approximately 40 hours on light airplanes and 72 hours of ground school);
2. The training of 14,600 through the secondary course;
3. The training of 2,000 through cross-country courses;
4. The training of 9,500 instructors;

Approximately 30,000 of CPT's trainees are serving in the air services. CAA maintains 612 primary training schools throughout the United States—a number which has not changed in the past year.

Doolittle Given Aviation Medal

IN RECOGNITION of his notable achievements in the advancement of aeronautics, Brig. Gen. James H. Doolittle has been presented with the Daniel Guggenheim Medal by Dr. J. C. Hunsaker, Chairman of the National Advisory Committee for Aeronautics. The ceremony took place in the office of Lt. Gen. Henry H. Arnold, Commanding General of the Army Air Forces, in Washington.

The April raid on Tokyo, conceived and executed under the command of Doolittle, was not a factor in making the award, it was stated at the presentation.

Jack Knight Joins CAA

Jack Knight of United Air Lines has been loaned by the company to the Civilian Pilot Training Program for the duration. He will help accelerate pre-military training now under way, and will generally advise with and assist young men eligible for civilian pilot training.

Flight Officer Rating

Congress recently completed action on the "flight officer" bill which, in addition to creating a new pilot designation in the Army Air Forces, will revise the pilot training policy of the Army Air Forces. Under the new set-up all pilots will be trained in the cadet class, and upon completion of their training will be either commissioned as second lieutenants or as "flight officers."

Trainers Can Take It Report Texas Officers

Six years and 4,000 hours of hard service is the record credited to 20 BT-9 trainers still in the service at Randolph Field, Tex., where William A. Guy, North American field service inspector reports them "in great shape." Much praise was given the planes, Guy said, both by officers and mechanics. "Opinion here is that students trained in BT-9's advance faster when they go on to Kelly field," his report added. He said that one day's flight report showed that on April 22 of this year, 388 of the BT-9's and 14's flew 2,669 hours and 20 minutes, which, he said, officers agreed was something of a record.

—LEGISLATION

CPT Appropriation Only \$72,677,459 As Army Reduces Use of Facilities

Earlier Figure Was \$127,000,000 Stanton Says

FOLLOWING decision by the Army to reduce its use of civilian pilot training facilities, the Civil Aeronautics Administration will receive only \$72,677,459 for CPT, under legislation approved by the House and pending before the Senate as this issue went to press.

According to House hearings, just published, Charles I. Stanton, CAA Administrator, told the Appropriations Committee that while estimates totaling about \$72,000,000 were finally presented to Congress, earlier figures called for an appropriation of \$127,000,000 for CPT's 1943 work.

This figure, Stanton stated, was tentatively presented to the Bureau of the Budget early in the year on the anticipated Army demands on CPT. However, it was later revised downward when the Army changed its stand on training Army pilots with available civilian facilities.

The hearings, at which various CAA and Army officials appeared, were for consideration of the final installment of \$36,677,459 on CAA's \$72,677,459 request.

The Administrator told the Committee that while CPT is capable of handling 75,000 enrollees during the year without any expansion of facilities, it has been estimated that by drawing upon unused civilian planes, and by giving courses on a full-time rather than a part-time basis, this figure could be increased to around 180,000 pilot courses yearly. Actually, it was recorded at the hearings, less than 35,000 men will get pre-military training, and of these more than 40% are scheduled to go into non-combatant activities.

The earlier estimate calling for funds amounting to \$127 million was based upon publicly announced Army plans for using CPT facilities to give 40,000 elementary flight courses, 30,000 secondary and 14,000 advanced. The present revised Army plan calls for only 13,350 elementary courses, 9,990 secondary courses, and 6,500 cross-country and instructor courses. It is pointed out that these figures cannot be added together to get the total number of students to be trained, since the majority of enrollees will advance from one course to the next.

Evidence in favor of the quality and flying ability of CPT graduates was presented to the Bureau of the Budget, and later to Congressmen. Figures were given showing that of every 100 Army cadets who had received CAA training, eight were washed out of Army schools as lacking advanced flying ability. At the same time, 43 out of every 100 cadets picked by Army selection

boards who lacked previous flight training were found to be unsatisfactory pilot material and washed out by the Army's flight schools.

Complaints by Congressmen that the Air Forces has been enlisting far more men than it can train, putting them on cadet pay and telling them to wait, were answered by General H. H. Arnold. He stated that while 250,000 men now have been accepted or are being examined for combat flight training, these men "never have to wait more than three or four months" before being called by the Air Forces. Army reception centers, Gen. Arnold said, are able to give pre-flight training to 14,000 men in addition to those who get into Army flight schools

without the reception center training.

In discussing the difficulty of getting new equipment for CPT training, following Secretary of War Stimson's declaration that CAA should not ask for material, equipment or facilities which might affect production of materials for the armed forces, CPT Director John P. Morris stated that there was considerable difficulty in acquiring new planes for CPT because the Civil Air Patrol holds a higher priority rating. It was explained that the Army's present stand on CPT was directly responsible for a situation under which CPT is unable to get higher-powered trainers similar to those used by the Army.

Military Affairs Minority Lambasts Report On 'Reckless' AAF Expenditures

Calls Charges Unjustified; Mfrs. Progress Praised

A FIRST-CLASS fight developed in the House Military Affairs Committee last fortnight over that group's investigative findings on the War Dept.

Chairman Andrew J. May (D. Ky.) filed a majority report claiming that evidence of "reckless expenditures" in the Army Air Forces "continues to increase the Committee files." It added that "the time has come when the contractors' honeymoon at the expense of the taxpayers of the nation must end."

Immediately, 10 Democrats filed a minority report objecting to the generalized way in which charges were made by the majority.

The majority report was signed by 10 Republicans and three Democrats, including Chairman May. The 10 Democrats filing the minority report were: Harter (O.), Edmiston (W. Va.), Merritt (N. Y.), Costello (Calif.), Brooks (La.), Sparkman (Ala.), Kilday (Tex.), David (Tenn.), Fitzgerald (Conn.) and Thomason (Tex.).

These members claimed that only the last 10 pages of the 77-page majority report had been read before the full committee.

The minority report on aviation, prepared by Cong. Costello, praised the aircraft manufacturing industry, and singled out for condemnation the following charge of the majority against the Air Forces:

"There are indications of improvement in the War Dept.'s construction activities since jurisdiction was transferred to the Corps of Engineers, but evidence of reckless expenditures in other branches under fixed-fee contracts, particularly in the Air Corps Branch continues to increase the committee files. . . . It is the intention of the committee to develop this evidence at public hearings as soon as time permits."

The minority report said: "This statement regarding 'evidence of reckless expenditures' is a mere assertion on the part of the special investigators who compiled the general report for the Committee. . . . There is no justification for such a statement indicated by the evidence or testimony which has been submitted to the members. . . . The unwarranted reference to matter contained in the Committee files which has not been made the subject of any investigation on the part of members of the Committee has no proper place in the report. . . . It appears unfortunate that general language of this character should have been included in the report when no opportunity has been given to the Committee to conduct the investigations, to hear witnesses, or to actually determine whether any reckless expenditure does continue to exist or not. . . ."

Highly commending the aviation industry, the minority group stated in their report: "The terrific expansion which has taken place both in production of engines and planes by the industry has been an accomplishment that has never before been attempted in history. . . . This nation is today producing the number of planes required to meet the President's apparently fantastic program of 60,000 planes. . . . The additional facilities that will shortly

Flivver Plane Next in Line For Gas Rationing

GASOLINE RATIONING literally "took to the air" with an announcement out of the Washington OPA to the effect that eastern small aircraft operators would go on rations July 22.

The ruling is considered necessary, the OPA said, because fuel for low powered planes can also be used in automobiles. To exempt it from rationing along with the higher octane fuels might leave an opening for easy diversion of the gasoline for illegal use, officials said. Rationing cards will be made available to flyers prior to the effective date of the new rule.

be in full production will undoubtedly make it possible in the coming year to reach the 125,000 goal set by the President. . . . Much criticism has been leveled at the aircraft industry for failure to establish assembly line methods of production. . . . However, it must be pointed out that whereas only 2500 parts are required to create a small 4-door sedan automobile, over 300,000 parts are necessary to build a large type bombing plane."

The majority report, however, centered criticism, not at aircraft production, but at war profiteering, claiming that "continual evasion of responsibility by the contractors and the War Dept. representatives, has led in many cases to a virtual breakdown as far as the reporting of true cost is concerned. . . . It is firmly believed and supported by evidence which has been gradually accumulating in the Committee's files, that an outstanding and serious need in conduct of the Government's war program is an adequate, currently maintained cost accounting and audit system."

The majority group stated: "Excessive war profits are important from a morale point of view, from an economic point of view, and from the point of view of our entire financial structure. . . . Responsibility is on the Government to eliminate exorbitant profits, not after the war is over, but during the period the war is being prosecuted. . . . The recent creation of a War Frauds unit in the Department of Justice appears to be a proper step in this direction and action was promptly taken by the Committee to cooperate. . . . Evidence developed by the Committee and evidence on hand in the Committee's files reveals a sordid picture. . . ."

THE MAJORITY *of*
Twin Engine
TRAINERS
are powered by...



JACOBS
Engines

JACOBS AIRCRAFT ENGINE CO.
Pottstown, Pennsylvania, U. S. A.

CAB Study of Safety Requirements For Specialized Operations Urged

House Group Reports on 2 Airline Accidents

NOW IS the time for the Civil Aeronautics Board to study the problem of differentiating the safety requirements of (1) privately owned and operated aircraft, (2) charter planes, (3) mail-express-freight planes, and (4) passenger planes, according to the House Select Committee to Investigate Air Accidents.

During the past fortnight, the committee reported on two airline accidents: Northwest Airlines at Fargo, N. D., on Oct. 30, 1941, killing 12 passengers and two crew members (Capt. C. F. Bates surviving), and TWA near Las Vegas, Nev., Jan. 16, 1942, killing three crew members and 19 passengers, including Carole Lombard.

The NWA crash, the committee said, was caused by (1) ice, (2) failure to attach proper significance to reports on ceiling and visibility, (3) failure of Civil Air Regulations and company operations to forbid pilots' letting down through icing

conditions to look at an airport, (4) error on the part of the pilot in permitting his ship to reach a stall speed, and (5) confusion which resulted from inadequate familiarity with the new type of "ship" horizon recently installed on the plane.

The TWA accident was due "to the negligence of Capt. Williams in failing to fly his plane on an on-course signal of Amber Airway No. 2 and in flying his plane off of the established course at such a low altitude that it collided with Potosi Peak," the committee said.

In the NWA report, the committee, in urging CAB to study safety requirements for different operations, predicted that "with the growth of commercial air operations many schedules will carry only freight, express and mail, while other flights will be devoted exclusively to local and express passenger service.

"At the end of this war perhaps 100,000 aviators may be operating privately owned planes in the United States."

The report recommended that "serious consideration" be given to an age-and-hour limit for pilots in passenger-carrying service. To meet this problem, it urged that promotions to dispatcher or supervisory positions with comparable pay, or enforced retirement of older pilots on pensions, are matters which require study.

Personnel Needed

"Your committee has long been of the opinion that, with certain outstanding exceptions, the dispatching personnel on commercial airlines are not as competent as is desirable, largely because of (1) inadequate compensation, (2) lack of flight experience which makes it impossible for them to visualize the problems confronting pilots whom they are supposed to direct; and (3) failure of management to vest in them that degree of discretion and peremptory authority which is so often essential to avoid accidents," the report claimed.

The NWA crash would not have occurred if Capt. Bates had not let down to check the ceiling, it continued, adding that the committee had made a recommendation on this subject following Eastern Air Lines' Savannah accident.

"Whereafter the Civil Aeronautics Board, acting on our suggestion, proposed to all interested parties the adoption of the following regulation: 'No pilot shall let down for the purpose of ascertaining the ceiling or visibility at any airport when the pilot has received from the . . . Weather Bureau or an employee of the air carrier, or any other source, information that the weather is below the authorized minimum for landing at that airport.'

"Your committee now expresses its whole-hearted endorsement of the above regulation for all passen-

ger-carrying schedules by the air carriers, notwithstanding the opposition of the Air Line Pilots Association and some of the airlines."

In its report on the TWA accident, the committee pointed out that on July 15, 1941, the CAA issued an order "suggesting or requiring" that pilots flying from Las Vegas to Palmdale, Calif., along Amber Airway No. 2 "confine their flight movements to the actual on-course signal of the radio ranges serving this airway for all operations, day or night, contact or instrument."

Capt. Williams, a "skillful pilot," failed to obey the order or suggestion, and his failure was "wholly inexcusable," the report asserted. It expressed the belief that Capt. Williams "had so much confidence in his ability that he failed to take those precautions which more prudent or less skillful pilots would not dare to neglect."

CAA Shares Blame

Although blaming Capt. Williams, the committee also criticized the CAA for not making its July 15 order more definite. "This notice was ambiguous to say the least . . . Capt. Williams may . . . have regarded it as merely a suggestion which, under the circumstances, he was free to disregard." In the future, CAA should issue "explicit orders," it added.

It also expressed the opinion that where there are recognized hazards on, about, or near any airport, or where there is seasonal bad weather, it should be the duty of the CAA to establish safe minimums, instrument approach and flight procedures for landings and take-offs.

"We appreciate the fact that the aviation industry had a rapid growth and that so many changes have been made in airplanes, navigational aids and airport facilities that no hard and fast rule, no fixed standard, could be adopted for all airports," the committee explained. "We do favor, however, a standardization of procedures, applicable to all airlines, using airports where hazards are known to exist."

Women Mechanics' Program Expands

The Army Air Forces' Women Mechanic Training Program, which aims to add 25,000 women mechanics to the air fields throughout the country during this year, is reported by AAF officials to be progressing according to schedule.

Many more Air Depots have been incorporated into the plan and have added their facilities to those four or five which were used to start the plan early this year.

P.O. Glad Army Awakes to Pick-Up

Postmaster General Frank C. Walker on June 25 issued a special press release expressing gratification that the Army reported satisfaction with glider pick-up experiments at Wright Field.

He pointed out that the Post Office Department had been using All American's pick-up device, the same principle, for three years over 1,386 route miles with more than 94% of the scheduled flights operated.

Aviation people in Washington noted the inference that the Army was so far behind the P.O., but recalled also the long, hard struggle which was necessary to sell even the department on the plan in the not-distant past.

CAA May Train Mechanics Now

CAA is given authority to train aviation technicians as well as pilots, in the Randolph bill passed with amendment by the Senate recently. The House approved the legislation on Mar. 25.

Senate amendment limits the training of technicians by the CAA to members of the enlisted reserves of the military services in inactive status. Text reads: "The CAA is authorized, within the limits of available appropriations made by Congress, to train civilian pilots and aviation technicians or to conduct programs for such training, including studies and researches as to the most desirable qualifications for aircraft pilots: Provided, that the training of civilian pilots may include, but the training of aviation technicians shall be limited to, members of the enlisted reserves of the military services in inactive status."

Air Mail Funds Voted

The Second Deficiency Appropriation bill recently passed by the House carries air mail appropriations of \$174,000 for 1941 and \$944,000 for 1942. For 1941, the breakdown is: increased rates on Chicago and Southern, \$93,828; increased rates on Delta \$80,375. The appropriation for 1942 includes \$855,240 for excess mail loads, and \$58,982 for increased rates on Mid-Continent.

Aviation Academies

Sen. Stewart (D., Tex.) introduced a bill recently to create academies of Military and Naval aviation under the War and Navy departments. Each would have four branches: the Military Academy being located in the South, Central South, East and between the Rockies and the Mississippi River; the Naval Academy would be split up between the Atlantic, Pacific and Gulf coasts, and the Great Lakes. Similar bills introduced in the 77th session of Congress have been buried in committee rooms.



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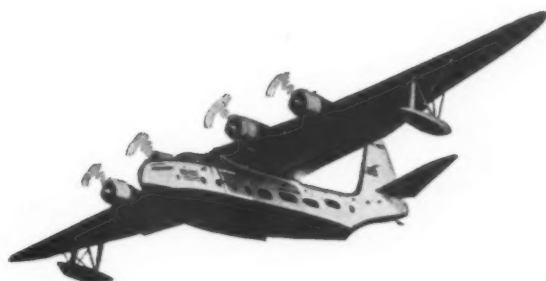
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death struggle. Lengthening transportation lines — both in the air and on the sea — must be kept open . . . war materials must flow from production lines to world-wide fronts in greater volume.

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We are proud that these opportunities are offered us in this crisis, and accept the responsibilities connected with them. We pledge the full resources of our co-ordinated international transportation system.

American Export *Lines Airlines*

25 Broadway, New York

KEEP 'EM FLYING . . . KEEP 'EM SAILING

U. S. Can't Wait for Plastic Cargo Planes, Sheehan Says

THE U. S. does not have time to wait for plastic cargo airplanes—it should proceed at once to construct thousands of these craft from metal for use in the war effort, said William M. Sheehan, air cargo expert, in the July issue of *Harpers Magazine*.

Sheehan, who has written numerous air freight articles for *AMERICAN AVIATION*, stated that although several cargo craft of substitute materials are on the drafting boards, "good blue print prospects often prove unsatisfactory, and there is every likelihood that we should meet with major trouble either in the production or use of sky trucks that were made of substitute materials."

"Be that as it may, we simply have not time to wait for plastic cargo planes. The war has to be fought in 1942 or 1943 at the latest. Anyone who has had the slightest contact with airplane fabrication will agree that production of a distinctly new type inevitably suffers from much delay."

"We have time only to select existing tried models and by heroic effort expand production of them. Metal is a very convenient material for mass production—parts can be

stamped out with great speed as in making automobiles. And sky trucks mean real mass production, orders by the thousands, not dozens."

The author did not express an opinion as to whether sufficient metal will be available for construction of large numbers of the freight carriers.

Other principles urged by Sheehan were: (1) set a definite production goal, (2) establish a top priority rating, (3) standardize and freeze a few suitable designs, and (4) put manufacturers in the charge of a production czar.

Discussing production goals, he urged that, assuming total planned aircraft production during the coming fiscal year to be 90,000 units, one-sixth or 15,000 of them shall be allocated to sky-truck purposes.

On the subject of priorities, he said: "Inasmuch as they are just as vital to offense and defense as fighting planes, sky trucks should at least enjoy the present A-1-a rating of combat aircraft."

Needs Real Power

On his third point, Sheehan pointed out that "three 'thoroughly tried transports,' a short-range landplane such as the Douglas cargo transport, a long-range seaplane like the Consolidated PB2Y-2, and a long-range landplane such as the Curtiss-Wright Condor III, could be selected and their designs frozen for the duration."

"From my own experience in one of the nation's largest aircraft factories, I am convinced that production which is solely a question of fabrication can be expanded much more rapidly than that which involves continual design change," he said.

Explaining his ideas on a production czar, Sheehan stated that "I mean a production head who has real power, subject to Presidential approval, to commandeer factories, tools, labor, or anything else necessary in order to get quick and extensive results. Perhaps the country may see the need before long of a czar for all its aircraft production. In this event, sky-truck production could be handled as a part of the larger program."

Sheehan also emphasized that cargo gliders can play an important part in the war for the U. S. "Towed by a regular transport plane, three gliders weighing 2,500 lbs. and with a wing area of 800 sq. ft. will each lift about two tons of freight," he said. "If the tow plane itself carried four tons, the whole tow train would carry 10 tons. Two Douglas DC-3's could carry eight tons at a cruising speed of 190 mph. If each towed three gliders they would be slowed down to about 150 mph, but they would transport 20 tons."

Priority System Effective July 15

THE NEW SYSTEM of priorities on the commercial airlines goes into effect July 15, according to the War Dept. The system, designed to decentralize control of priorities and to assure maximum usage in the war effort of available space, had been scheduled to go into effect June 20.

New priority classifications are (1) White House personnel or others for whom air transportation is directed for accomplishment of a particular mission by the President, the Secretary of War or the Secretary of the Navy; (2) pilots of the Army, Navy and Marine Corps ferrying commands, (3) Army, Navy, Marine Corps, Coast Guard and Allied government military personnel or others whose air travel is specifically ordered, and civilians whose air travel is essential to the war effort, and (4) Army and Navy equipment, ammunition, supplies and materials.

New Alaskan Stops

CAB recently announced the issuance of an amended certificate to Pan American Airways, Inc., authorizing service to and from the intermediate points of Tanana Crossing, Alaska, and Burwash Landing, Yukon territory, Canada, over the route now operating between Fairbanks, Alaska and Whitehorse in the Yukon territory. The new points are to be served with respect to persons and property, except mail, on a flag stop basis.

North Country Holds Key Spot In Air Future

Predicting a post-war air age of "unprecedented proportions," C. H. "Punch" Dickens, vice president and general manager of Canadian Pacific Air Lines, stated recently that Canada occupies "a pivotal point in the world air map of the future and a vital link in Empire and world air routes."

Speaking before the Advertising Club in Montreal, Dickens also praised Canada's civil aviation as having been responsible "for laying a very considerable part of the foundation on which the present war air effort has been built."

He disclosed that Canadian Pacific's stake in aviation now amounts to about \$3,500,000, that the company has close to 100 planes, and that flying mileage exceeds 5,000,000 plane miles per year.

Of the future, he said: "It is well to remember that immediately after the last war the major over-water commercial air development was the establishment of the English Channel air ferry route by disbanded RAF flyers and converted military machines. Now, almost a quarter of a century later the Atlantic has become a mere routine hop, and air transport has come of age. The ground facilities and experienced personnel will be available for commercial transport once the war ends."

Canada Delivers Norseman Cargo Transports to U. S.



FIRST PICTURES of a group of personnel and cargo transports built in Canada for the U. S. Army have been officially released for publication by the manufacturer, Noorduyn Aviation, Ltd., Montreal, and cleared by the Army Air Forces public relations division.

Five of the single-engine, 10-place ships are shown lined up before the factory, wearing the now obsolete circle-centered star of the U. S. services. This may indicate that the photos have been withheld from publication for several months.

Known in Canada as the Norseman, the transport has been designated by the Army as the C-64A. Washington officers refused to divulge the number of craft being acquired, or how or where they are being used. The Norseman is convertible either to floats or skis, how-

ever, giving rise to reports that the C-64 may be used in Alaska and Canada war transport.

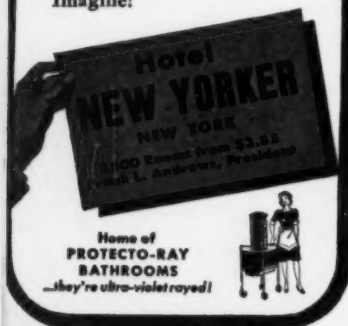
Although the Hyde Park conference last year between U. S. and Canadian officials resulted in an announcement that Canada would build air craft for this country's armed services, this is believed to be the first such instance made public.

The Canadian Norseman is powered with a Pratt & Whitney 550-hp engine, has a span of 51-ft., with useful load of 2,636-lbs. as a landplane passenger model and 2,692-lbs. as a landplane freighter. Gross weight is 6,450-lbs. Construction is fabric covered steel tube fuselage, and fabric covered wing of spruce spars and ribs. Cruising speed as a landplane is 150 mph, and cruising range is 600 miles.

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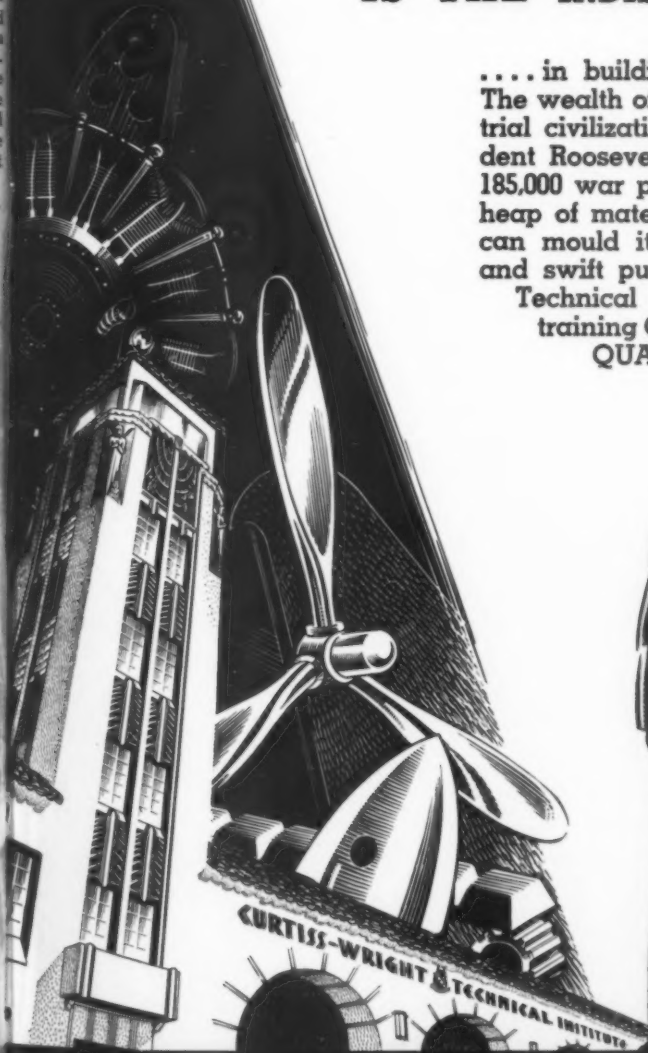
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TRANSPORT

Airline Personnel

Operations

W. Fiske Marshall has been named to fill the new post of operations manager for Northwest. Capt. R. L. Smith succeeds him as superintendent of the eastern division. Capt. Frank Judd, pilot on the SA-BI run, has been made superintendent of the northern division.

Capt. R. O. Buschmann has been transferred from Pan Am's JI headquarters to the company's African subsidiary. Capt. E. D. Avary has been shifted from the western to the eastern division, at Rio de Janeiro.

Walter J. Addems, formerly chief of flying for United's eastern operations, has been promoted to director of flight operations for the company's entire system.

T. A. "Ted" Johnson, formerly station manager for United at SL and SF, has become operations manager at CG of United Air Lines Victory Corp. William M. Tener has been promoted to acting station manager at SF, replacing Johnson. Otto F. Williams Jr. has become station manager at SL, and George A. Webb has been named to a similar post at RT.

First Officers Jeffrey Flatgaard and L. A. Poole of Braniff are now serving with the Navy.

Don Stremmel has been transferred from MS to OR as National's station manager.

Norman Steenhof has joined United's design department.

James B. Manning, Francis P. O'Keefe, John J. Wurm and Miss Ruth L. Davey have been assigned to Pan American's airport development program at NY.

George H. McKee, Penn-Central captain, has been promoted to the position of chief flight engineer. He is stationed in WA.

Sales and Traffic

Among new Pennsylvania-Central employees are W. J. Van Winkle, ticket agent at WA; Myra A. Corey, reservation clerk at DO; E. Lamberth, apprentice agent at AH, and A. O. Zimmer, apprentice agent at MK.

Mrs. Dorothy Towne is now acting dtm for United in MP, following the departure of her husband, Al, for military service.

New graduates of Pennsylvania-Central's reservations school have been assigned as follows: Mary Jane McGee, Ida Mae Heakin, Lottie Phillips and Verne Etter to GR; Dorothy Gerst and Alberta King to DO; Lillian Hurley, Lois Haight, Elizabeth Sliger and Virginia Arbur to CV; Georgia Taylor and Margaret McAvoy to PT; Virginia Varney, Vesta Beck and Sonya Reeves to WA; Elizabeth Milholland to AX; Margaret Kraft to BJ; Dorothy Inman to HX and Harriet Mitchell to KX.

New United reservations personnel include Virginia Johnson, Miss B. A. Draper, B. P. Hudson and R. E. Montgomery at NY; Miss P. S. Mayne, Miss C. M. Martin and H. E. Pitt at CG; P. G. Sellers at SL; Miss H. Sargent and Miss M. L. Dickey at LA; B. S. Taylor and Misses J. B. Fisher, A. S. Hickerson, E. Robertson, E. Boyle and J. F. Thatcher at SF, and Misses M. W. Markwart and B. M. Crutchfield at PD.

AIRLINE COMMENTARY

THERE is talk in Washington—among highly responsible aviation officials—about a "Shipping Board of the Air," to handle all air shipments of war supplies . . . Whether advocates will be able to do anything about it remains to be seen . . . These officials feel that the Air Forces should be left free to fight the war and should not be required to bother with transportation of supplies . . . Apparently high Army officials don't agree, at least not now . . . There may be further developments . . .

When the airlines suspended all discounts on July 1, many of the operators waited breathlessly to see what was going to happen to their air travel card business . . . Most of the large companies had 50% or more of their business coming from scrip accounts, and whether suspension of the 15% discount would drive these customers away was a worry . . . However, unofficial figures show that between 80% and 87% of the scrip accounts are being retained . . . This is considered very satisfactory . . . Incidentally, suspension of discounts—scrips, government, round trip, etc.—is expected to add at least 6% to gross passenger revenues . . .

ALTHOUGH the Burma Road is done and gone, experts are still arguing about how many airplanes would have been required to replace that lifeline . . . Col. E. S. Evans, president of Evans Products Co., said recently that one cargo plane could deliver as much freight per day as 218 trucks . . . There were 4,500 trucks in use on the Burma Road and they were delivering 30,000 tons a month, he said, adding that only 35 cargo planes could equal the delivered cargoes of 4,500 trucks, and where gliders are used it would require less than 10 air trains to perform the same service . . . However, an aviation official in the know claimed that trucks on the Road were carrying only 17,000 tons of cargo monthly, because 40% of their capacity was taken up with gasoline . . . A DC-3, he said, could carry 6,000 lbs. over the route four times a day, or a total of 12 tons . . . Thus, 50 DC-3s could carry 18,000 tons monthly . . . Of course, to allow for overhaul and maintenance, several more planes would be needed . . . Although the Road is closed, the same set-up could be applied to India-China . . . And while the experts talk, the amazing China National Aviation Corp., the only India-China operator, struggles along with less than 10 airplanes . . .

Because they contain military information, the military Director of Civil Aviation has requested CAB to keep the monthly airline financial and traffic reports confidential . . . However, CAB is expected to devise a method of culling out the secret data, leaving the other newsworthy statistics a matter of public record . . . Devising the new method will take time, though . . .

ANOTHER chapter in aviation's history closed June 28 when the last of the Boeing 247-D airliners was taken out of commercial service . . . On that date, United Air Lines turned over its remaining fleet of these planes to the Army . . . Other operators have done likewise . . . The 247-D, generally well liked, especially by pilots, cut seven hours off coast-to-coast schedules in the early 30's . . . It should perform yeoman service for the Army as a cargo-carrier . . .

Air express poundage in the first quarter of 1942 was 89.6% over the same period last year, with nearly 4,000,000 lbs. being moved . . . Pan American's express volume has skyrocketed, especially on the Pacific, where the company's Clippers are averaging close to 10 hours of flying daily . . .

E. B.

Braniff's 15th Year

Braniff Airways on June 20 began its 15th year in the air transportation business. From an organization in 1928 of three employees it has grown to a corporation now employing nearly 1,000. At present, over 100 members of the organization have been assigned to the air cargo service the airline is operating for the government. The company recently moved its traffic and advertising department from Oklahoma City to Love Field, Dallas, Tex. A general office is no longer maintained in Oklahoma City, the treasury and legal departments having been moved to Dallas in April.

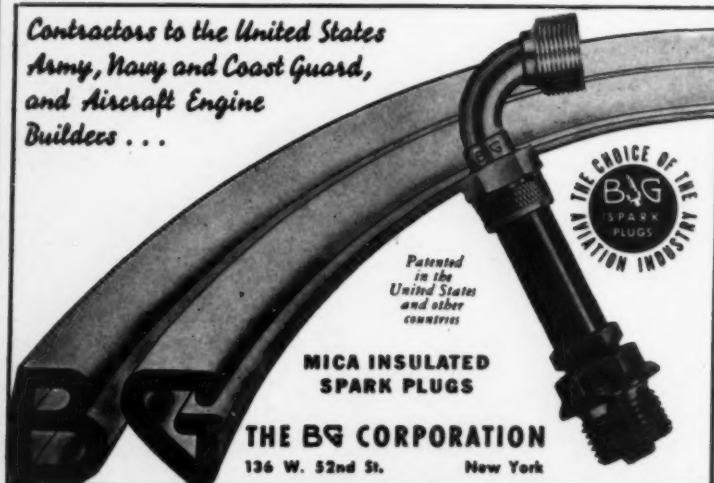
Navy Buys Air Bases

Purchase by the Navy of the Miami Municipal Airport and the International Airport, both owned by the City of Miami, Florida, has been approved by Secretary of Navy Knox. Both airports are being sold to the Navy at cost. Upon completion of negotiations, the two airfields will be combined to form part of the Naval Air Station, Miami.

PAA Elects

Samuel F. Pryor, Evan E. Young and Harold M. Bixby, all vice president of Pan American Airways, have been elected to the board of directors, filling all existing vacancies.

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TO THE EMPLOYEES OF GENERAL TIRE AND RUBBER CO.

NOW IT CAN BE TOLD OFFICIALLY: WE BOMBED TOKIO IN THE NORTH AMERICAN BOMBERS YOU HELPED BUILD. EACH PLANE PERFORMED MAGNIFICENTLY, RACING TO ITS OBJECTIVE JUST OVER THE HOUSETOPS. THEN SHOOTING UP A FEW HUNDRED FEET TO DROP ITS BOMBS. OUR PLANES EASILY OUTMANEUVERED THE JAPANESE PURSUIT SHIPS. EVERY BOMB SEEMED TO SMASH INTO ITS TARGET. FLAMES POURED FROM THE MILITARY AND NAVAL INSTALLATIONS AND ONE SALVO MADE A DIRECT HIT ON A NEW WARSHIP UNDER CONSTRUCTION. WE FLEW LOW ENOUGH AT TIME TO SEE THE SURPRISED LOOK ON FACES IN TOKIO AND OTHER JAPANESE CITIES. EVERY ONE OF THE SEVENTY NINE MEN ON THE FLIGHT JOINS ME IN PRAISING THE B HYPHEN TWENTY FIVE. THE JAP PLANES COULDN'T DO A THING TO STOP US. THEY WILL NEVER STOP US IF YOU KEEP UP YOUR GREAT WORK. SPIL.

JAMES H DOOLITTLE BRIGADIER GENERAL US ARMY AIR FORCES.



**General Tire's Mission was at the
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 For Quality and Safety*

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Draft Deferments Seen for Essential Personnel in Civilian Pilot Training

Program is Vital To War Effort, SSS States

THE training of civilian pilots and civilian pilot instructors is an activity vital to the war effort, Occupational Bulletin No. 8 of the Selective Service System states. Moreover, it advises, the requirements of the armed forces for additional pilots and instructors have created an unprecedented demand for qualified trainees.

"Within the Civil Aeronautics Administration Civilian Pilot Training Program, there are critical occupations which, for the proper discharge of the duties involved, require a degree of training, qualification or skill," the bulletin reads.

"These critical occupations are such that unless they are filled by persons with the required degree of training, qualification or skill, a serious loss in the effectiveness of this training program will result."

Selective Service Headquarters therefore advises local draft boards to consider carefully for occupational classification "those qualified persons engaged in these activities or in preparation of training therefore."

The bulletin advises:

"Lists of institutions conducting training courses in the operation and maintenance of aircraft are subject to constant modification and revision. In order to facilitate the determination of the status of such institutions, the Civil Aeronautics Administration has expressed its willingness to cooperate with the Selective Service System through its regional managers."

Critical occupations in the Civil Aeronautics Administration Civilian Pilot Training Program are listed by SSS as follows:

Chief, Evaluation Section (C.P.T.)
Asst. Chief, Evaluation Section (C.P.T.)
Chief, Flight Section (C.P.T.)
Asst. Chief, Flight Section (C.P.T.)
Chief, Ground School Section (C.P.T.)
Assistant Chief, Ground School Section (C.P.T.)
Chief, Maintenance Section (C.P.T.)
Asst. Ch. Maintenance Section (C.P.T.)
Chief, Performance Division (C.P.T.)
Asst. Ch. Performance Division (C.P.T.)
Chief, Records & Review Section (C.P.T.)
Assistant Chief, Records & Review Section (C.P.T.)
Chief, Standards Division (C.P.T.)
Asst. Ch. Standards Division (C.P.T.)
Chief Examiner, Aircraft & Flight Instruction sections
Chief, General Inspection Division (Departmental & Field)
Assistant Chief, General Inspection Division (Departmental & Field)
Contractor (Flight & Ground School)
Coordinator (C.P.T.)
Director (C.P.T.)
Assistant Director (C. P.T.)
Inspector, Aeronautical (All grades)
Inspector, Flight
Inspector, Ground School
Inspector, Maintenance
Instructor (All courses)
Mechanic, with A or E Rating
Specialist (C.P.T.)
Specialist (Private flying)
Student Instructor (All courses)
Student, Advanced Meteorology (C.P.T.)
Student Pilot (All courses)
Superintendent, Regional (C.A.A.)
Superintendent, Regional (C.P.T.)
Asst. Regional Superintendent (C.P.T.)
Supervisor, Airman Procurement (Army—C.P.T.)
Supervisor, Flight
Supervisor, Ground School
Supervisor, Maintenance

All must have more than two years of training except those with (*) which denotes more than one year and less than two years' experience or training.

CAA Wants Instructors

Seeking men to fill vacancies in the CAA, the Civil Service Commission released a bulletin June 25 calling for qualified applicants for the positions of flight supervisors and ground school supervisors, at salaries ranging from \$3,200 to \$3,800 a year. Details of the requirements as set forth in the bulletin include age limits of 21 to 45 for flight supervisors. Ground school supervisors must have reached their 25th birthday. No maximum age is listed for the latter.

War Aviation Committee Controls U. S. Air Space

THE WAR AVIATION COMMITTEE, formed to settle air traffic control problems which result from the wartime increase in military air operations, has assumed control of the navigable air space of continental United States, the War Dept. announced June 20.

Although the committee has been functioning for several months, its existence had not been officially announced until the War Dept. statement.

Composed of the Assistant Secretary of War for Air, the Assistant Secretary of the Navy for Air, the Assistant Secretary of Commerce for Air, and the chairman of the Civil Aeronautics Board, the committee now acts on all problems concerning air traffic which affect more than one of the departments or agencies represented.

"The committee rules upon the recommendations submitted by the Interdepartmental Air Traffic Control Board, which investigates and coordinates air activities between

War's Comedies

Its "propeller" in the RAF now—not "airscrew."

Adoption of the popular Yankee name was made official in the British industry following an embarrassing misunderstanding as related in *FLIGHT*, official organ of the Royal Aero club.

According to the story, a Royal Air Force squadron in the Middle East sent a request to base for four airscrews and in due course received four air crews.

Now, by official request its "propellers."

the various branches, including both military and civil aviation," according to the War Dept. "The recommendations of this Board, concerning the use of certain navigable air space at certain times, when approved by the committee will be binding upon all the branches of military or civil aviation concerned."

"All War Dept. agencies that propose to engage in air activities or operations which might, in any manner, involve a permanent or temporary hazard or obstacle to aircraft in flight, now must obtain advance approval of the committee. The proposed plan of air activities must be submitted to the Board, with full details as to the time, extent and area affected. The committee will rule on all such matters in the continental United States, and for 200 miles seaward from the eastern, western and southern shores, excluding, of course, the possessions of other nations."

"The Board now has been granted authority to appoint regional committees from time to time."

PARKS GRADUATES



VALUABLE TODAY—OF GREATER VALUE TOMORROW

GRADUATES of Parks Air College are trained not only for their immediate tasks in commercial aviation, but their extensive, yet specialized education equips them for eventual leadership.

Parks trained men will not only be valuable to you now when the most efficient, all-out operation and production is the first order of the day, but they are trained to make substantial contributions to the advancement of aviation when Victory and peace come.

Look to today's Parks graduates for the winners of positions of responsibility tomorrow. A letter to Oliver L. Parks, President will bring complete information as to men available today.

PARKS AIR COLLEGE, Inc.
East St. Louis, Illinois

Classified Ads

WANTED—Flight Instructors with ratings to qualify as flight instructors in Air Force Primary Flying School. Also mechanics and helpers. Hawthorne School of Aeronautics, Orangeburg, S. C.



Taylorcraft's Glider: Being turned out in volume by Taylorcraft Aviation Corp. for the Army-CAA glider training program is the TG-6 glider shown above. Construction is basically the same as in the company's tandem trainer airplane. The craft is also known as the ST-100, the S for Charles I. Stanton, CAA Administrator, who conceived the idea of converting lightplanes into gliders. Announcement was made several weeks ago that Aeronca Aircraft Corp. is also building gliders.

IN 1921

this commercial version of the MB-2 (the original Martin Bomber) introduced the plastic nose section, utilizing a transparent cellulose plastic.

Pioneering in Plastics on a 1921 Martin Transport

No hasty wartime improvisation is the plastic nose now standard on nearly all American bombers. As early as 1921 The Glenn L. Martin Company commenced experiments with cellulose plastics, giving aviation its first transparent plastic nose section. From these early experiments, and the years of unremitting research that followed, has come the tough, clear acrylic nose of the Martin B-26 . . . the first all-plastic nose section made without metal supporting members to hamper visibility. Less than half the weight of glass,

quickly formed and easily worked, this Martin plastic nose offers high resistance to weather, temperature variances and fierce air pressure, as well as absorbing gun-recoil. But this is only half the story of Martin plastic research. One type of 1942 Martin bomber contains more than 400 plastic parts to save aluminum, reduce weight, and speed production. Today, as since 1909, Martin pioneering is paying dividends to the entire aviation industry.

The Glenn L. Martin Co., Baltimore, Md., U. S. A.

Martin
AIRCRAFT

Builders of Dependable



Aircraft Since 1909

20
YEARS AFTER

the introduction of the pioneer plastic nose, the all-plastic warhead of a Martin B-26 gives full forward hemisphere visibility to increase efficiency in both attack and defense. Smaller plastic gun emplacements guard rear and upper hemispheres with heavy firepower.

CIVIL

CAA Pilots in Ground Forces Will Fly Field Artillery Ships

OFFICERS and enlisted men in the Army Ground Forces who hold, or have held CAA ratings as private pilot or higher are to be given the opportunity to fly as pilots in the Field Artillery "grasshopper" air force, the War Dept. announces.

Pilots for the small, low-powered observation planes which have replaced observation balloons as the eyes of the artillery arm of the service, will be chosen from among officers, not above the grade of Captain, and enlisted men. Mechanics will come from the ranks of enlisted men below the grade of Technical Sergeant who have had aircraft or automobile motor repair training.

Successful applicants for pilot and mechanic ratings will be sent to the Field Artillery School at Fort Sill, Okla., for advanced training. It is contemplated that pilots successfully completing the course will wear wings and receive flying pay. Enlisted pilots will hold the grade of Staff Sergeant, while mechanics will receive ratings of Technician 3d Grade.

Applications for both pilot and

mechanic training will be made available to all qualified Ground Forces personnel. Pilot applicants will be required to furnish all information regarding their flying experience, the numbers of hours flown in planes over and under 80 hp., the amount of solo flying time in cross-country and night flying, and other pertinent facts. Knowledge of flight instruments will also be tested, and applicants questioned as to civilian occupations which might add to their qualifications as a pilot.

Applicants who have received pilot training under the CAA must state when the course was completed and the names of the flight instruction contractors. Those applying for assignment as mechanics who hold, or have held, a certificate issued by the CAA as airplane engine mechanics must furnish their certificate numbers and the date of expiration.

Development of low-powered sports planes to direct the fire of concealed gun batteries and fulfill reconnaissance and observation missions has been under way several months, it was revealed.

CAA Restricts Data On Flying As Precaution

ALL CAA PUBLICATIONS covering flight data, by order of the Department of Commerce, have been placed on the restricted list and hereafter will not be available to the general public. The order followed a request from the Army Air Forces that such action be taken.

Specifically mentioned in the order were the bulletins *Weekly Notice to Airmen*, *Air Navigation Aids*, *Instrument Approach Procedures*, and *Danger Areas*. Distribution will continue to designated landing areas, U. S. and Canadian air carriers and the Canadian government, the military service and certain other government agencies. This will include only those Civil Air Patrol units on active duty.

Airport Directory Out For Duration

PUBLISHERS OF the Hackensack, N. J., Airport Directory Co. have announced voluntary suspension of the publication for the duration with the following explanation:

"We wish to advise at this time that because of the military value of the information contained in our publication, *Airports, Established Landing Fields and Seaplane Bases in the United States*, we have voluntarily suspended publication for the duration of the present conflict."

Women Pack Parachutes

A new course including fabric work and parachute packing has been started in Vancouver for women interested in aviation. The class is preceded by elementary ground school training organized by outstanding Canadian women pilots.

What Others Say

WILLIAM M. SHEEHAN, air cargo expert—"As one old aircraft foreman once said to me, 'The worst bottlenecks in airplane factories wear collars.'"

NEW YORK HERALD TRIBUNE—"Two blazing Italian heavy battleships, retiring precipitately through the Mediterranean from the blows of the RAF and of American B-24 bombers, would seem to set the final seal upon the long argument which has raged ever since General 'Billy' Mitchell dropped his picturesque phosphorus bombs on the hulk of the surrendered German Ostfriesland. The air has won . . . The line-of-battle ship, which has dominated naval warfare at least since the sixteenth century, has been dethroned in this war with a conclusiveness which even the radicals could hardly have anticipated . . . In the end one of three things will probably happen: either the carrier will acquire the relative durability of the battleship or the battleship will clothe herself in an armor of steel and fire capable of withstanding carrier attack, or the land-based airplane will assume the range and power to make it dominant even over Pacific distances, and surface vessels of all sorts will sink to the role of auxiliaries, as they have already largely done in the Mediterranean and the North Sea regions."

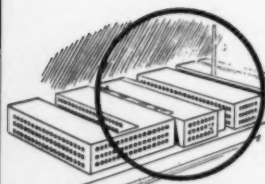
NEW YORK TIMES—" . . . airplane carriers should not be used to do any work that long-range bombers can do. There is still room for the carrier, beyond the effective range of the land-based bomber. The airplane carrier, in fact, is now the most effective of all warships and the backbone of the fleet. It has taken the Navy authorities and the Naval Affairs Committees of the House and Senate much longer to find this out than it should have done. It may be questioned, indeed, whether their conception of a properly balanced fleet is not still much closer than it ought to be to the traditional conception of such a balance. Even today, for example, Chairman Vinson of the House Naval Affairs Committee announces that the construction of super-battleships is being continued as insurance against a possibility that future carrier losses might turn sea warfare into 'an old-fashioned slugging match.' It is hard to follow this reasoning. The best insurance against future carrier losses is obviously the construction of more carriers."

WASHINGTON DAILY NEWS—"Either the United Nations must take all the wraps off air power or they will needlessly prolong the war, if indeed they do not lose it. This war will be won with air power or it will not be won . . . Air power against sea power, or land power, is like shooting fish in a barrel . . . It will take a five-ocean air force to win the war . . . The airmen of this country, the manufacturers, the designers, are ready for such a program. It's up to the statesmen and the high strategists to catch up and give air power the priority it must have if this war is to be won by us in 1943 or 1944."

RALPH S. DAMON, president, Republic Aviation Corp.—"Two years ago, it was the practice of the people of the United States, its allies, and especially our apologists, to believe that we may not have as many planes as the Axis, but that we had better planes. We claimed that quality, at least, was on our side. Recently, and with greater frequency and more certainty, from month to month, we have heard it stated that the Allied Nations were outstripping the Axis in quantity of production. It is now our privilege to weld these two claims of the past into one and state flatly and without fear of contradiction, by the deeds of our foes, that the American aircraft industry and the production teams of our still-free Allies are producing, not just better planes than Germany's nor just more planes than Germany, but both more and better fighting aircraft, to be the assurance and warrantly that victory inevitably shall be ours."

COMMERCIAL AVIATION (Canadian publication)—"The United States Government has been wise enough to recognize the rights of the Civil Aeronautics Authority and, far from desiring to suppress activity in this regard, it has commendably encouraged civil flying as an adjunct to possible military requirements of the future. In Canada, civil aviation has received little official encouragement thus far and has survived in its present form, not with the help of the government, but despite the apparent lack of interest on the part of the powers that be. In this regard, Canada is undoubtedly passing up a God-given opportunity to provide a sustained and ever-increasing interest in aviation in Canada. It is not enough to utilize the existing facilities of civil aerodromes and personnel with respect to elementary training for the RCAF, rather it is urgently necessary that there should be brought into being a well-organized Civil Aeronautics Administration which would have the power to follow the lead of our great neighbor to the south in the establishment of adequate facilities for the training of both pilots and mechanics."

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AMERICAN AVIATION DIRECTORY: Published twice a year, spring and fall. Complete reference data on administrative and operating personnel of airlines, manufacturers, accessories firm and their products, organizations, schools and local operators, federal and state government agencies concerned with aviation and related aviation interests in the U. S., Canada and Latin America. Single copy, \$5; Annual subscriptions, \$7.50. Discounts on quantity orders. Next issue Oct. 15, 1942. DAVID SHAWE, Managing Editor.

Fortnightly Review

(Continued from page 1)

understand (or incapable of comprehending) the fundamentals of air power.

There is still lacking a well-balanced aircraft production program. Four-engined long-range bombers were given the green light but the necessary auxiliary airplanes (the supply ships and destroyers for the battleships) have been held up by red tape, obstacles and objections.

As the Air Forces have grown in strength, Air Forces chiefs have been given greater power—but with definite limitations. Air Forces chiefs still must know when to stop talking or arguing because the top-side is still dominated by non-air leaders. Air Force growth has been largely in numbers, not in positions at the inner table.

Major thinking is still largely in terms of 1918 and surface movement. Airplanes are considered merely super-artillery, not in their full roles in all-out air power.

The tendency is still toward copying the enemy or allies instead of initiating new phases of air power. Such as emphasis on gliding after Crete. But in transportation of men and materiel we have not even copied except in a minor way.

A few hundred cargo airplanes could do the work of thousands of trucks in such places as the Middle East and China. Even seven months after Pearl Harbor there is no integrated thinking and planning for transportation by air on a large scale. It's still in the supplemental stage despite the internal battles by airmen.

Without draining any vital war resources or materials, 15,000 lightplanes could be built in six months with existing plant

facilities. These planes could move a million men across the English Channel in a few days—a real invasion. But such thinking is scorned by ground chiefs who still think in terms of hazardous surface movements as spearheads instead of follow-up.

There still is no coordinated planning for the over-all use of all civilian aviation facilities despite the real need for more training of pilots and mechanics.

A handful of cargo planes have "saved the day" more than once in the past seven months, as records will show after the war is over. Yet the topside is still not thinking in terms of thousands of cargo airplanes despite Germany's reported supply of 10,000 such airplanes.

Thus we have reached the end of the first seven months.

• • •

If all this sounds gloomy, there is another side—the side of progress. There are official letters in government files with dates of 1940 and 1941 which wouldn't be written today and which may arise some day to embarrass the writers. They are letters and documents scoffing at air power needs. Probably the fact that such letters would not be written today is progress.

Also, events have forced action on air power in numerous directions. The public is "sold" on air power. The pressure is increasing. Production has gone up and up even though it has not been too well balanced. Inch by inch there is reason for hope. The day when air power blooms in full glory in Washington is still not foreseeable, but the day of its arrival is, nevertheless, inevitable.

Contradictions

WAR-TIME censorship does strange things. News from the Aleutians has been negligible. Presumably what has happened up there is kept secret to keep from aiding the enemy. If anybody knows what's going on it is certainly the enemy.

But on the east coast eight Nazi spies who were landed by U-Boats were caught and a vast amount of newspaper space dramatized the whole affair, plus the trial. If the men had been caught and imprisoned (or shot) without any publicity, the enemy might not have known, and very probably would have no inkling of the disposition of the spies. But we told the enemy and the world. Now that we kindly told Germany her first attempt failed, she can endeavor to send more.

Maintain the Team

BRIG. GEN. HAROLD L. GEORGE has undertaken an impressively huge task as Commanding General of the new Air Transport Command. He is a capable officer. There are few who would say that he is too small for his job, large though it be.

One of his many perplexing problems is the trans-African ferry and transport route opened up under Army contract last year by Pan American Airways. The General has indicated in a press conference that his Air Transport Command is in the process of "taking over" the route. There probably are sound reasons why a certain amount of militarization of this vital aerial life-line is necessary, due to its terminus in an active war zone.

But General George should move with caution. There is an asset in any going airline concern which cannot be replaced or restored without long effort and in this case there is no time to lose in destroying an organization and replacing it in six months or a year or even longer. It is no secret that there is a definite feeling of opposition against Pan American in certain Army circles. The rights and wrongs of this attitude are much too complex to unravel at this stage. As a matter of fact, they should be of minor concern when time is of the essence.

The fact is that Pan American opened up the air route across

Africa. The fact is that the safety record is extraordinarily good. And the fact is that all of the ferrying of all of the lend-lease equipment across Africa up to the present has been handled by Pan American—not by any government agency. Much of the romantic stuff going the rounds lately about gas being hauled into the African interior by camels, and of staunch Americans building airports and facilities out of the jungle overnight, are pure fiction. Pan American took enormous quantities of supplies and equipment into Africa and set up a going concern. It would probably be indiscreet to disclose the total airline personnel on that Continent, but it is considerable. The Army is just now moving in its first men.

It is typical and, we suppose, quite natural, that the Army likes to do things its own way. The Army likes to start from scratch. Pan American will undoubtedly concede that the Army can do a better job in the long run. But let's not destroy any more teams—organizations that are doing a coordinated job. If General George is a keen administrator who understands airline operations, he will not replace the PAA organization with a batch of untrained and inexperienced airmen, but will utilize, expand, and supplement the existing men now on the job. Taking apart and destroying airline operations is a fatal mistake. Let's have no more of it.

Addendum

The editorial in the last issue commending the Aeronautical Chamber of Commerce for its hospitality to the annual meeting of the Aviation Writers' Association, and naming aircraft companies who played host at luncheons or dinners, omitted to name the United Aircraft Corp., which was co-host with Sperry Gyroscope Co. at a luncheon for the writers. The omission is regretted.

American Aviation Again Wins TWA Writers' Award

FOR THE FIFTH successive year an editor of AMERICAN AVIATION has won an award in the annual aviation writing and photographers' contest conducted by Transcontinental & Western Air, Inc.

Eric Bramley, managing editor of the magazine, won first prize in the magazine division and was presented with his \$100 check and trophy at a luncheon held by TWA at the St. Moritz Hotel in New York on July 9.

Second place winner in the magazine division was Selig Altschul, aviation writer for *Barron's Weekly*, and third place winner was Max Karant, editor of *Flying*.

AMERICAN AVIATION is the only aviation magazine to place in the contest for each of the five years it has been conducted. The awards are presented for consistently developing the most interesting and best informed writing concerning air transportation.

In 1937 an award of merit was won by Wayne W. Parrish, editor of AMERICAN AVIATION, there being no magazine division of the contest that year. In 1938 he won second place in the magazine division, and in 1939 he won first place. In 1940 Eric Bramley, then transport editor, won third place. Thus two writers for the magazine have won two firsts, a second, and a third in the contest.

Born in Scottsdale, Pa., April 12, 1916, Bramley was graduated from Northwestern University in 1937 with a B. S. in Journalism. He

was the first editorial writer employed by AMERICAN AVIATION after its founding, joining the organization July 1, 1937. Last month he was promoted to managing editor. He is married and has a son.

Judges were Dr. Clark B. Millikan, professor of aeronautics of the California Institute of Technology; Arthur Robb, editor of *Editor and Publisher*; Gill Robb Wilson, president of the National Aeronautic Association; Jack Frye, president of TWA, and Justin B. Bowersock, aviation editor of *The Kansas City Star*.

Other awards were: Newspapers of 100,000 circulation and over: Frederick C. Graham, aviation editor of *The New York Times*, first place; Maj. Sherman B. Altick, former aviation editor of *The New York Sun*, second; Richard Kirschbaum, former aviation editor of *The Newark Evening News*, third.

Newspapers of less than 100,000 circulation: Dick Darrow, *Columbus (Ohio) Citizen*, first; *The Hartford Times*, second; Alexander McSurely, aviation editor of the *Dayton (Ohio) Herald*, third. Darrow took top honors in this division last year, and is now public relations director of a Curtiss-Wright plant.

Photographers' Division: Edward Salamon, first, winning with his photo of Mrs. Roosevelt at an airport; Lloyd S. Jones, *Youngstown (Ohio) Vindicator*, second; and Robert Seelig, *New York Daily*

'Getting to Be a Busy Place'



News, third. Seelig won the 1940 contest in this division.

Graham won \$250 cash, while the other first place divisional winners won \$100 each. Other winners received lesser sums.

Obituary

Peter J. Backus

Peter J. Backus, 68, inventor and mechanic, died at his home in Delphos, O., June 25. Mr. Backus was the inventor and patentee of the Lindbergh circular landing field at San Diego, Calif., and also was associated with Glenn Curtiss when the latter made his first plane flight from Cleveland to Sandusky.

Comdr. Taliaferro

Lieut. Comdr. A. Pendleton Taliaferro, Jr., died recently at his home in Alexandria, Va. Lieut. Comdr. Taliaferro served in the U. S. Naval Air Forces during the first World War, and was decorated with the Navy Cross for distinguished and heroic service. In 1927 he joined the staff of the Aeronautics branch of the Department of Commerce and was closely associated with the aviation industry from then until he returned to active duty with the

Navy in 1941. He was holder of one of the earliest transport pilot licenses granted by the Department of Commerce. Burial was in Arlington Cemetery with full military honors.

Richard Behrens

RICHARD BEHRENS, 38, transport pilot for Atlantic Air Motive Corp., a unit of the Aerial Radio Corp., Roosevelt Field, L. I., died in a plane crash at West Orange, N. J., June 11.

DS Medal to Brett

The War Dept. has announced award of the Distinguished Service Medal to Lt. Gen. George H. Brett for exceptionally meritorious service while serving in various capacities in England, Egypt, China, Java and Australia. He is at present in command of the Allied air forces in the Southwest Pacific, with headquarters in Australia.

Col. Wilson Named

Col. T. B. Wilson, chairman of the board of TWA, and now on active duty, has been named Chief of Transportation Service for U. S. Army Forces in Australia.

Bookshelf



WEST WITH THE NIGHT, by Beryl Markham; Houghton Mifflin Co., 2 Park St., Boston, Mass.; 290 pp.; \$3.00.

Here is factual fiction combining two inviting subjects: flying and Africa. This autobiography of Beryl Markham—first woman mail pilot in the world—tells of emergency landing fields marked by old tin cans full of lighted kerosene and fenced in to keep the lions out; of flights that brought oxygen cylinders to men dying in jungle miasma camps; of plane scouting for elephant hunts. Impressionistic data on flights to Cairo, Salum, Benghazi, Tobruk, will acquaint the reader with these exotic places now playing a vital role in the international war. Theme underlying the work: Africa is the last vestige of a dead world, and aviation may make it the cradle of a shiny new one.

The book is informative and entertaining reading for the general public.

AIRCRAFT ENGINE AND METAL FINISHES, by Myron A. Coler, Ph.D.; Pitman Publishing Co., 2 W. 45th St., New York, N. Y.; 127 pp.; \$1.50.

This book, providing a brief description of current American practices employed in finishing the exterior surfaces of aircraft engines and similar parts, is intended primarily for the reader who is confronted with real problems, but who possesses little or no technical knowledge of finishing procedures. The text is an elementary discussion of the principles on which these procedures are based. Particular attention is paid to organic finishes because of their importance and because of the need for selected, systematic information.

This text is a survey of the field it covers. Volumes many times its size have been written on aspects of finishing to which it devotes only a few lines. For the sake of comprehensiveness and brevity, all elaborate chemical theories have been omitted and emphasis placed upon experimental findings and practicable conclusions.

Sales Literature Available

Resistoflex Corp., Belleville N. J.: a 24-page catalog showing the various products made of oil-proof and solvent-proof Resistoflex PVA compounds.

MILLION-MILER—The Story of an Air Pilot, by John R. Tunis; Julian Messner Inc., 8 W. 49th St., N. Y., N. Y.; 253 pp.; \$2.50.

This is the story of Jack Zimmerman's 15 years of flying which began when he was 20 and which find him today Chief Pilot of the Atlantic Division of TWA with a record of more than 15,000 hours in the air.

Zimmerman has been in commercial aviation almost from its start, flying one of the first tri-motored Ford planes for TWA in days when flying was cold, wet and noisy. He took up the first

DC-1 in 1934; he piloted the first scheduled flight into New York's mighty new airport, La Guardia Field, when it was opened to traffic in 1939; he was at the controls of the giant Boeing Stratoliner which set a transcontinental record for a scheduled transport flight on its inaugural trip in July, 1940.

The volume is light reading, informative, and freely illustrated with excellent photographs. Included at the back of the book are briefs on prominent aviators; tabulations on important dates in aviation; data on commercial aircraft; and a helpful index.

GETTING THEM INTO THE BLUE, by Ernest K. Gann; Thomas Y. Crowell Co., 432 4th Ave., N. Y. N. Y.; 153 pp.; \$2.00.

This book is an accounting of flight research—the kind that really counts—which does include some movie Hell diving, but which mostly deals with men in wind tunnels, peering at the dials of scales, measuring the stresses of air upon the surface of wings, ailerons, and rudders . . . men in flying suits and helmets riding, not airplanes, but an electric carriage dashing eighty miles an hour along a towing channel . . . men with cameras pointed through quartz windows in an engine cylinder, to capture on film the flash of burning fuel at the incredible speed of 40,000 pictures a second.

Pilot Gann tells the story of how planes are planned, how they are made, how they are powered. He tells of Glenn L. Martin's first factory in an abandoned church at Santa Ana; of the modern plants—from the big North American assembly line to the smaller factories doing special jobs. There is a section about materials and their assembly from all parts of the world . . . the plastics, the "ersatz" materials, and what may go into the ships in the future. There is a section about the aircraft worker himself . . . the various classifications, what he does, and how much he gets for doing it, the need for training, the working conditions, the future and the possibilities for advancement. The factual text is livened up so as to be interesting and informative to the general reader with an interest in aviation. Included are numerous first-rate photographs and diagrams.

ARISE TO CONQUER, by Ian Glead, D.F.C.; Random House, 20 E. 57th, New York, N. Y.; 223 pp.; \$2.00.

Wing-Commander Ian Glead, in his early twenties, was one of the tiny band of flyers who fought off the Nazi air onslaught upon the heart of the British Empire. His story is only incidentally one of heroism; it is far more a simple narrative of duty assumed and done with youthful enthusiasm and unconscious idealism. It tells an unadorned tale of sky-fighting men, who they were, what they did and how they lived and died at the moment of personal and national and world crisis.

Letters

Mulhall, Pa.
I have just read the articles in the July issue of *AMERICAN AVIATION* dealing with the small amount of available airplane and personnel resources that are being utilized for the war effort. I wish to congratulate the writers of these articles and I hope Congress conducts a real investigation of the aviation training situation. A thorough investigation is urgently needed at once.

I happen to be a private pilot with over 250 hours' flying time and when the CAA made available refresher courses, I applied and was accepted and was sent for training to a CPTP contractor, who, after nine hours decided to eliminate me because of flight inaptitude, as he termed it. Queer that this hadn't shown up in my three and a half years of flying. In my opinion the main reason was lack of sufficient experience on the part of the instructor in dealing with the students.

So powerful are the contractors for the CAA program that if any one of them decide to disqualify a person, it is impossible to get on any other program, no matter what your qualification may be, and at this time when there is supposed to be a shortage of pilots and green youngsters are being taken in.

This is a book of exciting encounters in the air and, above all, one that renews faith in a younger generation that faced overwhelming odds and overcame them.

ENGINES, Parts IV, V, and VI, edited by E. W. Knott, M.I.A.E. and compiled by a panel of experts; Chemical Publishing Co., 234 King St., Brooklyn, N. Y.; 136 pp., 106 pp., and 120 pp., respectively.

Part IV deals with the "Dagger VIII" and "Cheetah X" aero engines. Leading particulars of each engine are followed by detailed practical notes on maintenance and operation.

Part V deals with the Pratt and Whitney "Wasp Jr. B", "Wasp H 1", "Hornet E", and "Twist Wasp C" Series Engines which are being extensively used in American military aircraft. Leading particulars and all necessary technical data for each type are given, as well as detailed instructions on the installation, testing and maintenance. Illustrations and useful lubrication charts supplement the text.

Part VI deals with the Wright "Cyclone" engines also being increasingly used in this country in military aircraft. The same treatment is given in this Part as in the two preceding.

I am at present in a situation where I have not much choice even there are CAA inspectors and instructors who think I would make good material for advanced training. I shall be forced to let the draft board decide matters for me.

The Navy requirements in experience are too high for me and the Army has only the glider program which doesn't interest me.

I am 36 years of age, single and very much interested in aviation, and at present am without a position due to having given up position to take the CAA course from which they have dictatorially barred me. There are probably many like myself, eager to help, but blocked at every step. Money and time spent to no avail.

FRANK A. MINOR

Washington, D. C.

I have read with much interest the article by E. J. Foley appearing in the June 15 issue of *AMERICAN AVIATION*. I think that this is a splendid idea. There is no substitute for quality and the suggestion made by Mr. Foley is a means of insuring the aviation industry of having available a high quality type of equipment accessory parts.

L. WELCH POGUE, Chairman
Civil Aeronautics Board

DELAYED OPENING PARACHUTE JUMPS AND THEIR LIFE-SAVING VALUE, by Arthur H. Starnes; Parachute Science Service, 333 N. Michigan Ave., Chicago, Ill.; 85 pp.

In this handbook, Starnes gives an illuminating and comprehensive presentation of special basic and reassuring knowledge regarding parachute jumping from high altitudes. His text amply attests the value of the scientific approach he considers necessary in proving his contention.

An experienced parachute jumper, Starnes stepped out of a Lockheed Lodestar traveling 165 mph. at 30,800 feet above the ground and fell 23,300 feet, to within 1,500 feet of the ground before opening his chute.

Wilson On New Board

Gill Robb Wilson, prominent aviation enthusiast and New Jersey Senatorial candidate, is a newly-elected director of the Air Training Corps of America, an organization which, in conjunction with the Civil Aeronautics Administration, is working to give two million high school boys pre-flight aviation training by 1943. Wilson is also Aviation Commissioner for the state of New Jersey, and Pres. of NAA.

Franklin

FINE AIRCRAFT ENGINES

AIRCOOLED MOTORS CORP., SYRACUSE, N. Y.

Arteries for Air Armadas

WEATHERHEAD *Flexible* HOSE



VITAL mechanisms in modern military planes for take-off, flying, fighting and landing depend upon *hose* for the flow of the forces of power. Every assembly must withstand the toughest front line demands—failure of the hose may mean failure of the plane.

Weatherhead High, Medium, and Low Pressure Flexible Hydraulic Hose Assemblies are used on every type of military and commercial plane. They serve steadfastly under heat, cold, strain, vibration, and varying pulsations of pressure. Weatherhead high-quality, large-scale production is your assurance of the highest standard in "arteries for air armadas."

Other Weatherhead airplane parts include Dural Tube and Pipe Fittings; Vacuum Selector and Check Valves; Hydraulic Check Valves; and Hydraulic Actuating Cylinders. All are manufactured to Air Corps, Navy, or "AN" specifications.

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'Luxury' Maintenance Pays In Long Term

Writer Says 'Expensive' Ideas Often Justified

By E. J. FOLEY

THE past ten years have seen dozens of governmental and semi-governmental agencies, committees, and investigative bodies peering into the air transport field and all presenting copious evidence of their enthusiasm for the work at hand. If they were all negative in result, the industry might be worse off; if all positive, it might be much better, as we all agree it will have to be when the world gets on its feet again.



Foley

"How do you justify your high costs for interior maintenance?" "Isn't it possible for you to dispense with a large proportion of your current costs characterized as 'passenger service' or 'fleet service'?"

Then there are inquiries of another sort: "What procedures do you follow in your maintenance of fuel quantity gauges?" "What constitutes the bulk of your troubles with remote-indicating instruments?" "How do you determine residual fuel and oil weight?"

Don't get the idea that we've picked these questions with a critical hand because we think them foolish or unnecessary. The answers to some in the first group perhaps should be self-evident without any asking, but that is the only gripe we have. We'd rather not growl but try to brief the case for the air transport operator as we picture it from many long bull sessions in recent months. We feel that there's been a lack of balance in the publicity given the operators in the last couple of years. So much has been said to make the airlines appear to be "profiteers" that we'll make our few words this round an effort to reinject the word "pioneers", which we feel is still and will be for some time to come an exactly descriptive noun applicable to the men that staff our

commercial air fleets—men like C. R. Smith, Rickenbacker, Trippe, Frye, Patterson, Braniff, Baker of National, Ryan of Mid-Continent, etc.

Let's bounce through some items that provide answers for the first set of questions—those about engineering personnel, their expensive tastes and needless (?) talents; high maintenance costs on aircraft interiors; "passenger service" extravagances, etc. We think that the services dealt with in these questions are all immediately vital, but concede the temporary nature of some of them, at least in our minds. They've all sprouted into being in the warmth of "civilization" as it's filtered and sometimes flowed into the air transport field.

Good Old Days

We have watched its pressure come to bear on beings, human and corporate, and have heard the old timers in both groups howl about the load that it has brought. To watch these changes is surely not to be a laboratory researcher; anyone who has stood on a vantage point and watched the development of any field of endeavor has seen the same basic process. The airlines aren't alone when they talk of the "good old days," when the man did the job with the tools he had in his pocket, passed inspection on his own work and then, like as not, climbed into the left seat and flew the thing himself.

But civilization is a floodlight powered by technical knowledge, customer service and sales appeal (excuse us for talking in such pre-war terms). Although we'd often like to go back to the one-man show, we know that progress—in spite of the way it complicates our lives—progress alone can make the most of the future, and by absorbing every bit of its light and heat we can best serve the world with our commodity, air travel.

It takes just a minute to look at a few specific items that have blossomed from civilization and it will help our picture painting. Superimposing new on old, today we have torque wrenches and tightening limits on a hundred odd items. Who would have thought of so bothering when he could "feel" that everything was taken up just enough? Such progress, and we can think of many similar improvements, can be said to be permanent, and from the long term point of view to be efficient, economical and essential. This one item may be said to make it easy to be right: just look at a dial; said to permit the unskilled to handle the job; said to improve the overall technical excellence of service and operation. If all these things be granted true, let's also see that it makes one more positive check necessary; makes one more potentially troublesome gadget a shop necessity, and makes supervision, written specs and technical advice more necessary and naturally more conspicuous.

Identical consideration may be given to blind fastening devices. The complexities of aircraft manufacture necessitated them; engineering ingenuity devised them—simple to apply and effective. Yet for the operator to use them means storage regulation, restriction to certain secondary structures by engineering analysis, detailed inspection to assure uniformity of application, etc., etc.

Hydraulic systems on four-engined land planes, present production models, operate up to 3000 pounds per square inch. To snap up a ton or more of landing gear you need a ton or more of "boost" in the pipes. Here is a specific result of "civilization" that replaced a hand crank with some temporary "bugs" that will need more than a crank of a handle to exterminate them. We can see how easy it is to get the pressure up, but to hold it with as elusive a medium as hydraulic fluid is the problem that demands craftsman-perfection in valves and fittings. The automatic replaces the manual—again progress attended inevitably by problems demanding the patient pampering of skilled personnel. We're not damning development—just presenting facts.

Skill Needed

We get steam heating systems in our transports and get boiler trouble; use prestone as a heat transfer agent and get pump trouble. Higher powered engines may give us almost enough trouble to offset the additional power. We move from batteries through generators into auxiliary power plants and en route have to stare down such opposition as voltage fluctuation, "cooked" wires, fuses out, etc. Those who ask about the needed number of engineering as well as highly skilled personnel must be considerate of the complications of progress; they must realize that technical stabilization to the point where small improvements on an established basic technique represent progress is a long way off for air transport. These inquirers, usually administrative personnel away from the scene of activity, must absorb some of the understanding that their own local personnel evidence as a result of their "on the spot" observation of difficulties.

Service

The airlines have from their beginning done more in the way of passenger and/or fleet service than the other forms of transportation. This has been a strong selling point. It has done much to promote the development of air travel—some say more than agencies so purposed. It has been more than a "come-on"; it has been a sincere, hospitable gesture representative of a progressive industry. If it has been questioned as an expense, can't we justify it

as an investment—interest-bearing which will return its cost a hundredfold in friends and customers when peace comes? This passenger and fleet service, too, has been complicated by civilization, coincident with the material progress of man which has come to demand attention and the luxury of service to match the speed and comfort of air transportation.

Swank

We feel that less and less justification for inquiries regarding aircraft interior maintenance will be the order of the day in the future. Like the interior of the motor car, the airplane interior will tend always toward functional design and away from the "cheese cake". This is another evidence of "civilization" directly parallel to the automobile industry. When cars were new and the layman knew not what went on under the hood and could show no interest in the rate of flow of gas from tank to engine, we had whip stocks, fringed window shades, intricate lanterns, etc. The same may be expected in the airplane.

We've had time to take a look at only a few of the questions that have been and are being asked, but enough to see that the keynote of every one is justification—"Why do you need so much of everything to do so little of anything?" We don't propose to say that such questions are not in order; properly posed, they can do much to keep everyone on his toes to be sure of the necessity before making provision. But we think that this mental alertness to economies and savings is a part of all the men we mentioned earlier—not "profiteers" but "pioneers".

Complications

The inquirers might well be more considerate, give some thought to the complications that civilization has thrown in the operators' laps—the civilization that through labor brings development, safety, ultimate economy—all the things that the agencies desire. Thought given to these commonly known facts will engender understanding and a mutual respect that will assure both parties of success in their joint endeavor.

We've little time left but we must glance over some of the other questions about "remote indicating instrument troubles", "propeller governor quirks, their frequency, remedy, etc." The operator needs these data for his own records, to give him a clear picture of the next move in his maintenance game and to warn him of trouble. It is the inquirer's interest in checking such factors not only to assure safety and conservatism but to assist the operator in solving his problems—many of them the outgrowth of civilization.

Here's a joint venture, a cooperative project that offers great possibilities, but like all others it pre-

Expensive Ideas Often Justified

(Continued from page 34)

sents potential pitfalls, too. It must be mutual, in the fullest sense of the word. The operator must be generous and painstaking in his presentations to assure the correctness of his part of the bargain and thus permit realistic solutions to come forth. The inquirers must be tolerant in their demands, else the work entailed may mushroom into an answer to their question, "Why so much to do so little." If their demands are high, their requirements for data too detailed and red taped, they cannot but admit that they themselves have initiated at least one source for multiplication of technical personnel and division of effective economical operation.

These words are not "experting"; nor are they to be interpreted as destructive criticism. They're merely meant to start a thought or two on the subject of "civilization" and air transport. Its complexities from a short term viewpoint are expensive perhaps, but from a long range consideration we know they're inevitable and the net result will be economical stabilization, but not in 1943. Those agencies concerned with airlines must be ever aware of "civilization" and more than this, they must be considerate in their data requirements to avoid the "point of no return"—that requirement which may prove to be a demand for additional personnel without a correlated gain to be realized—a "so much for so little" proposition.

Infra Red Lamps

J. J. Deller, blueprint and reproduction department supervisor at Westinghouse's East Pittsburgh Works, reports a speeding up of 350% in Van Dyke reproduction and a complete elimination of rejects due to distortion.

This fidelity and reduced drying time are attained by the use of a 12-lamp bank of 250-watt infra red lamps replacing the steel roller and drying unit. Drying time for a 24x36 inch print is three minutes instead of ten. Some installation, smaller but of the same principle, would appear suitable and desirable for reproduction departments of airline operators.

Tool Salvage Idea

As a contribution to the war effort, Eutectic Welding Alloys, Inc., New York, has prepared a special folder covering the subject of salvaging tools and machine parts which is one of the most troublesome bottlenecks in most plants. The articles, illustrated with photographs, explain how, for a few cents tools costing as high as \$180 can be satisfactorily repaired. More important, some of this equipment cannot be replaced within a year, the article claims. Copies of the folder are being distributed free on request.

"Fairprene" Cements

A technical service manual entitled "Fairprene Cement, A New Industrial Adhesive" has just been issued by the Fabrikoid Division, E. I. duPont de Nemours and Co., Inc., Fairfield, Conn. The seven current grades of the product are discussed with attention to physical properties, vulcanization, gas permeability, resistance to oil and chemicals, proper methods for use, etc. Specific applications mentioned are: sealants for instrument installations; cement for cured or uncured rubber, neoprene, neoprene-coated fabrics; leakproof caulking for aluminum alloy sheet seams and joints, and protective coating on wires. The product is also being widely tested as a corrosion preventing coating for metallic surfaces.

Forged: Wright Aeronautical Corp. has made public the development of a forged cylinder head together with methods for



producing it speedily and in large quantities. The new head allows a 12 to 15% increase in power output of an engine without increase in weight.

U. S. Rubber Reveals Steel Studded Tread

U. S. Rubber Company, Detroit, Michigan, has announced a design for airplane tires known as U. S. Ice Grip Tread. It is designed for prevention of skidding on glaze ice or packed snow, and primary use will be in Alaska and Iceland. Sharp, cylindrical crimped steel inserts make the tread instantly effective on snow or ice.



When the tire is in service, the portion of each insert exposed at the road engaging surface of the tread wears down quickly until the exposed portion of the insert is below the tread surface in a no-load condition. Thereafter the rate of wear of insert and tread are substantially the same. The advantage of this wear is that the inserts don't contact the runway surface at initial engagement of the tread, so there is no impact or undesirable noise but positive traction and braking power on that portion of the tread under load.

Profitable Suggestion

A 37 cent drain cock, which eliminates steam heating system fittings costing \$10 on each DC-3, has put \$75 in the pocket of H. C. Curfman, TWA mechanic in New York. Curfman received that amount as first prize in the company's monthly suggestion plan contest. In addition to the \$10 savings, his suggestion also cut the weight three lbs. per unit.

New Weather Aid Now Perfected

Simmonds Aerocessories, Inc., 10 Rockefeller Plaza, New York, are now in manufacture on a chronometric radiosonde for transmission of meteorological data during upper air observations. This new unit is chronometric, operating on radio signals and not dependent on modulated frequency for sending reports. Radio interference will not ordinarily prevent evaluation of the records. Only the signals need to be received to record the data. The radio is not an integral part of the reporting apparatus, but is more correctly a means of operating the recording mechanism from a distance. The actual registering unit is thus simplified. The Simmonds Radiosonde may be calibrated with or without the radio because calibration accuracy is not influenced by the effect of checking apparatus on radio characteristics. Calibration, a mechanical process, is said to be simple and exact. Operation may be on any of the following frequencies—72.2, 154, 179.6 or 205 megacycles. The charts on which recording is made read directly as curves, a feature claimed by the manufacturer to be unique.

Replaces Rubber

Widespread use during the past year of a synthetic compound and rubber substitute manufactured by the Adel Precision Products Corp. in the aircraft manufacturing field has resulted in saving sufficient natural rubber to make some 20,000 tires, according to estimates made by company officials.

New Welding Process

Northrop Aircraft, Inc., has developed a new welding process in its research labs which makes possible the fabrication by welding of magnesium sheet, extrusions and tubing. The process is called the "heliarc" welding method. Development of the process was revealed by Thomas E. Piper, process engineer of the company. Others chiefly responsible for the development are V. H. Pavlecka, Chief of Research, and Meredith Russell, welding engineer.



Research activity at the Army Air Forces Materiel Center at Wright Field, Dayton, Ohio, has developed a fire-fighting crash truck. Illustrations of the demonstration above (left to right): Saturated with 200 gallons of gasoline, an old plane wreck is set afire by Air Force Officers to simulate a crash. Ninety seconds later fire-fighting equipment was summoned; the Cardox

truck drives up with all front nozzles in action and the flames retreat from the carbon dioxide; enveloped in CO₂ the flames die out and rescuers can proceed to the wreckage. CO₂ snow coats plane and ground. Lieut.-Col. Rudolph Fink, Chief of the Miscellaneous Unit of the Equipment Laboratory at Wright Field, said, "What we were looking for was life-saving equipment. This truck seems to be the answer."



WITH THE RED LOCKING COLLAR . . . SYMBOL OF SECURITY

THE greatly increased propelling energy and gun power, built into modern war equipment, call for bolted fastenings that can be depended upon to hold tight under any combination of vibration, stress, and shock load.

Already in use on all of America's military and transport airplanes, Elastic Stop Nuts were prepared for the job . . . and today there are more of these fast-gripping safeguards on your sky-fighters, tanks, Naval vessels, guns, and other war tools, than all other lock nuts combined.

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CATALOG



SAMPLE NUTS
FOR TESTING

Monster Propeller Ready For American Warplanes



Whopper: World's largest propeller shown here undergoing tests at the Curtiss-Wright Corp. plant, designers and builders of the huge driver, which engineers say cuts a 180-ft. swath, and is larger than the propellers on either the Army's B-19 or the Navy's "Mars."

Brewster CAP's Cargo Missions Speeds Service

BREWSTER AERONAUTICAL Corporation's flying employees—90 of whom are licensed pilots—have found new ways of speeding up the war production program through the Civil Air Patrol by participating in cargo service missions.

In announcing the arrangement, James Coburn, president of the Penguin Flying club, an organization composed of more than 700 Brewster employees, said the service had been approved by Cmdr. R. F. Cadiz, of the local CAP and "is the latest addition to the CAP's program of cargo missions involving transportation of national defense materials by airplane."

Coburn explained that the service "will provide rapid delivery of vital parts and materials between Brewster's own plants at Long Island, N. Y., Newark, N. J., and Johnsville, Pa., as well as between all Brewster plants and the company's business affiliates east of the Mississippi." Coburn has been designated as the authorized representatives for the CAP squadron and has been instructed to "render such transportation as needed by the Brewster Aeronautical Corp., in line with the national war effort."

Five CAP pilot members of the club will do the transport flying, using the club's three planes—two Piper Cubs and a Fleet open biplane. Pilots selected for the mis-

SUCCESSFULLY tested and declared ready for installation, the world's largest airplane propeller will soon go into service in the U. S. war effort, according to information revealed by G. W. Vaughan, president of Curtiss-Wright Corp., designers and manufacturers of the big blade.

Designated as the Curtiss Electric type, the new propeller will get its first service on a new type U. S. Navy flying boat. Subsequent use on high-flying bombers and cargo planes are expected to follow. Technical information on the new driving unit are closely guarded by military restrictions, but its designers say it is larger than the propellers installed on the U. S. Army's 82-ton B-19 bomber, or on the Navy's "Mars," largest flying boat in the world.

First of the new models, Mr. Vaughan said, already has undergone tests on a Wright Cyclone engine in an eastern aircraft plant and several have been installed on a new twin-engined Navy flying boat for flight tests. Especially suited to military aircraft operating at high altitudes where the air has only one-quarter the density it has at sea level, the propeller is of the hollow steel bladed Curtiss electric type comprising three blades measuring 19 feet from tip to tip.

Robert L. Earle, vice-president of Curtiss Wright Corp. and general manager of its propeller division, said the new development "was the result of two and a half years of hard work by our engineers and countless tests and revisions to assure its maximum performance efficiency."

Explaining that a great deal of study had been made in both blade design and retention in the hub in order to obtain greater strength without increasing the weight, Mr. Earle said that hours of tests revealed that the identical hubs used for the solid aluminum blades—which are only two-thirds the size—can be applied to the new giant. Both the Army and Navy assisted in the development program.

Production Goes Up

Production in the aircraft division of the American Central Manufacturing Corp., subsidiary of The Aviation Corp., showed marked progress for the second quarter and is now approaching a "satisfactory production volume," according to a report filed with company directors by Saunders P. Jones, president.

sions are Max Goldstein of New York City, Frank Kubecheck of Maplewood, N. J., Harry Quinn of Newark, William Parcell of Westfield, N. J., and John Kocadziej of East Rutherford, N. J. All are employees of the Brewster Newark plant. Goldstein is an inspector, Kubecheck and Parcell are sheet metal workers, Quinn a dispatcher and Kocadziej a plant guard.

PRATT & WHITNEY POWERS NEW CURTISS

"Troopships of the Sky"

In this world-wide war, giant troop carriers and cargo planes are a vital necessity to maintain supply lines to fighting fronts in both hemispheres. The Curtiss C-46, largest of the Army's great twin-engine transports, can carry tons of supplies and scores of men to combat zones thousands of miles away. The hundreds of C-46's now under construction will all be powered by dependable Pratt & Whitney Double Wasps.

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—MANUFACTURING

Western Aircraft Industry Studies Regional Wage Stabilization Issue

Los Angeles Scene Of Vital Hearing On Salary Scale

THE REGIONAL wage stabilization conference for the industry on the West Coast is meeting in Los Angeles, Cal., as this issue goes to press.

Presided over by Paul R. Porter of the Labor Production division of the War Production Board, its avowed aim is to establish a standard wage scale for aircraft workers throughout the region.

Attending are representatives of the nine major West Coast airframe manufacturers, CIO and AFL leaders, and delegates from the War and Navy Departments, the Department of Labor, War Manpower Commission and the Office of Price Administration. Representatives of other war industries in the Southern California area are present as observers.

The Main Issue

While the announced objectives include methods to minimize labor turnover, stabilization of wages at a level to check inflationary tendencies and maintenance of sound labor relations in the industry, actually the chief problem will be the establishment of a wage scale satisfactory to organized labor and possible of payment by management.

Serious difficulties must be overcome. Unions are seeking increased pay to offset claimed rises in cost of living. At the same time, they announce their definition of "stabilization" as being a standard wage rate equal to the highest obtained by collective bargaining in any part of the country. Of course, if this

is accepted, it will defeat the purpose of the War Production Board to stabilize wages regionally.

For instance, wage scales at Willow Run are reputed to be 30% higher than on the West Coast for similar job classifications. In addition, demands of workers at the Ford, General Motors and Chrysler plants for \$1-a-day general increases plus other pay privileges, if awarded by the National War Labor Board, to which the cases have been certified, will raise the ante just that much.

Wide Gulf Exists

Aircraft manufacturers, on the other hand, would prefer to stabilize wages to meet conditions within the region. They are willing to make increases which may be necessary to meet the competition of other war industries in the area, particularly the ship building plants.

Between the two viewpoints there is a wide gulf to be spanned. Observers in Washington, aware of the insistence of labor leaders for a nation-wide upping of wage rates to fit the highest now paid, believe that if anything less is agreed upon at this regional conference the problem will be far from solved. In fact, such an agreement might very likely stir up serious labor disturbances rather than "maintain sound labor relations" within the industry.

In any event, it is thought that no final decision can be reached until the cases now before the National War Labor Board have been settled.

Commando

Curtiss-Wright Corp. has formally named its C-46 twin-engined Army cargo plane the Curtiss Commando.



In Production: The first production model of the new Vought-Sikorsky F4U-1 Navy fighter plane went aloft in a demonstration flight before officials of the company and the Navy on June 30. An inverted gull wing model, the plane has been officially named the "Corsair."

Helium Funds

A conference amendment to the 1943 Interior Dept. Appropriation bill transfers the \$4,000,000 allocation for helium developments to the Navy Dept.

Millar Named Head of AWPC

AIRCRAFT WAR Production Council, Inc., Los Angeles group representing eight major southern California airframe manufacturers, has elected Richard W. Millar of Vultee as president of the Council. Donald W. Douglas has been named vice-president. Millar succeeds J. H. Kindelberger who has served the maximum term of three months allowed by the Council.

In summarizing activities during recent weeks, the Council points out that member companies have exchanged more than 400 items of scarce material in order to prevent production delays. In addition to exchanges of materials, it is noted that "trade secrets worth millions of dollars have changed hands." "We are pooling everything and anything," the Council says, "which could conceivably contribute to increase production."

Particularly mentioned among information exchanges effected through the Council were records and confidential reports on use of low carbon alloy steel in aircraft construction, substitution of plastics and plywood for strategic metals, and new methods of welding magnesium.

The council points out that information which it has compiled is available to other war manufacturers and to government agencies.

Packard Prepared To Build Aircraft Engines After War

Predicting that commercial aviation "would take a tremendous jump forward after the war ends, and especially in the air cargo field," George T. Christopher, president of Packard Motor Car Co., revealed recently that his firm intends to continue building airplane motors in the post-war era.

Packard's executive added that his firm had no plans to turn to airplane production after the war. However in the manufacture of power plants he said that the engine with which Packard expects to compete in commercial fields is basically the same engine which powered the famous Gar Wood racing boats and which now is being used in the PT boats in service here and abroad.

The same engine, redesigned for use in an airplane, Mr. Christopher believes, will produce an 1,800-hp. liquid-cooled engine which will compare favorably in weight with any liquid-cooled power plant now in production and one which will be economical for commercial service.

Packard plants today are engaged entirely in war production, he said, with the company using all its automobile buildings, plus three new ones needed for war work.

Fisher Body Unit Gets War Contract

FISHER BODY Division of the General Motors Corp. has been awarded a construction-management contract in excess of \$3,000,000 which, sources on Capitol Hill said was for a projected aircraft assembly plant to be constructed in Ohio at a total cost of approximately \$20,000,000.

The War Dept. announcement said construction would be supervised by the Detroit district of the Corps of Engineers and added that preliminary work on the site has been going on for several weeks, with the installation of railroad switching facilities and water mains almost completed.

Buick to Expand

Although present operations are 400% ahead of schedule, officials of the General Motors Corp. aircraft engine plant located in northern Illinois recently revealed plans for expansions which will eventually treble the present output.

Harlow H. Curtice, president of the Corporation's Buick division, said that Buick engines were now in use in warplanes.

WORLD'S PREMIER AIRPLANE FABRIC

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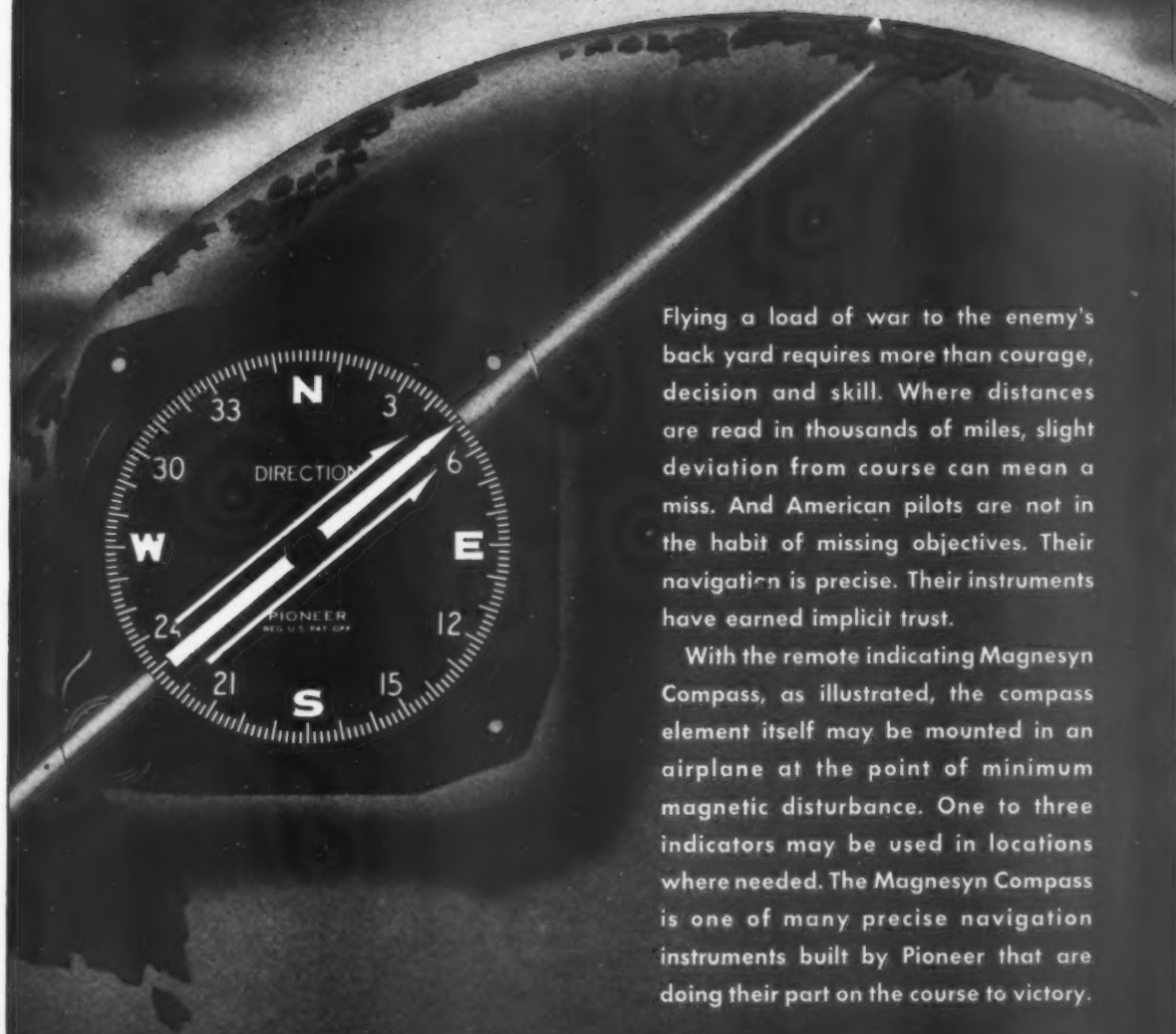
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SETTING A COURSE FOR VICTORY



Flying a load of war to the enemy's back yard requires more than courage, decision and skill. Where distances are read in thousands of miles, slight deviation from course can mean a miss. And American pilots are not in the habit of missing objectives. Their navigation is precise. Their instruments have earned implicit trust.

With the remote indicating Magnesyn Compass, as illustrated, the compass element itself may be mounted in an airplane at the point of minimum magnetic disturbance. One to three indicators may be used in locations where needed. The Magnesyn Compass is one of many precise navigation instruments built by Pioneer that are doing their part on the course to victory.

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MANUFACTURING

Manufacturing Personnel

C. G. Gridley, former vice president and works manager of Borg-Warner Corp., has been named president and general manager of the firm's Mechanics' Universal Joint division. He succeeds **E. C. Traner**, who will devote his entire time to the presidency of the Rockford Drilling Machine division. Other new officers in the mechanics division are **R. R. Rolph**, vice president and sales director; **Arch A. Warner** works manager; **G. A. Shallberg**, secretary and **W. E. Gustafson**, treasurer and assistant secretary.

Caleb Bragg has resigned as president of Langley Aviation Corp., and has joined the staff of **C. M. Keys Aircraft Service, Inc.**, 551 Fifth Ave., New York.

First Canadian to head the firm, **Harold S. Beddoe** has been elected president of **United-Carr Fastener Co. of Canada**. He started with the company in 1920 as a salesman and became vice president in 1933.

George W. Smith Jr., Newport, R. I., recently assumed his new duties as general manager of the **Bendix Aviation Corp.**, plant at Norwood, Mass. Before joining Bendix, Smith was a vice president with the **White Motor Co.**, Cleveland. **Oscar W. Nelson** is new plant manager at the **Pennsylvania Curtiss-Wright** propeller division plant, according to announcement by **Robert L. Earle**, vice president and general manager. Nelson takes over the duties of **Ralph J. Schneider** who for several months has been acting manager, and who now becomes general factory manager of the division with headquarters in **Caldwell, N. J.**

James A. Pigue is new Safety Engineer for the **Inland Division of Vultee Aircraft Inc.**, succeeding **F. T. Munch**, resigned. Pigue has been with Vultee for 18 months, having started as a first aid attendant.

General Motors President **C. E. Wilson** reports appointment of **C. S. Swayze** as assistant to **L. C. Goad**, general manager of the company's Eastern Aircraft division. Swayze was general manager of the **Delco Radio** division. **J. D. O'Brien** former production manager of the **Inland Manufacturing** division at Dayton, is now general manager of that division, succeeding **Wallace S. Whittaker** who has requested leave of absence to take a commission in the Army.

North American Aviation's **Inglewood, Calif.**, plant announces appointment of **Herbert A. DeShong** as new director of public relations.

Paul J. Frizzell, Washington, D. C., has joined the **Fairchild Aircraft** division at **Hagerstown, Md.**, according to an announcement from company

headquarters. He will have supervision over the contract and field service departments.

Henry E. Kingman has been elected to the position of executive vice-president of **Solar Aircraft Company**, San Diego, Calif., announces President **Edmund T. Price**. Mr. Kingman comes to Solar from the **Franklin Management Corp.**, of Boston.

L. H. Chenoweth, manager in the sales division of the **B. F. Goodrich Company** has taken a leave of absence to serve with the **WPB**, according to an announcement by General Manager **W. S. Richardson**. Chenoweth's duties are being handled by **I. N. Kimsey**, Akron district manager.

Arthur W. Kimbell, for 14 years vice-president and general manager, was recently named to the presidency of the **United-Carr Fastener Corp.**, of Cambridge. **Sinclair Weeks**, retiring president, was elected chairman of the board at the same meeting.

Joseph E. Lowes, Jr., has been appointed advertising director of the **Fairchild Engine and Airplane Corp.**, according to information released by **J. Carlton Ward**, president.

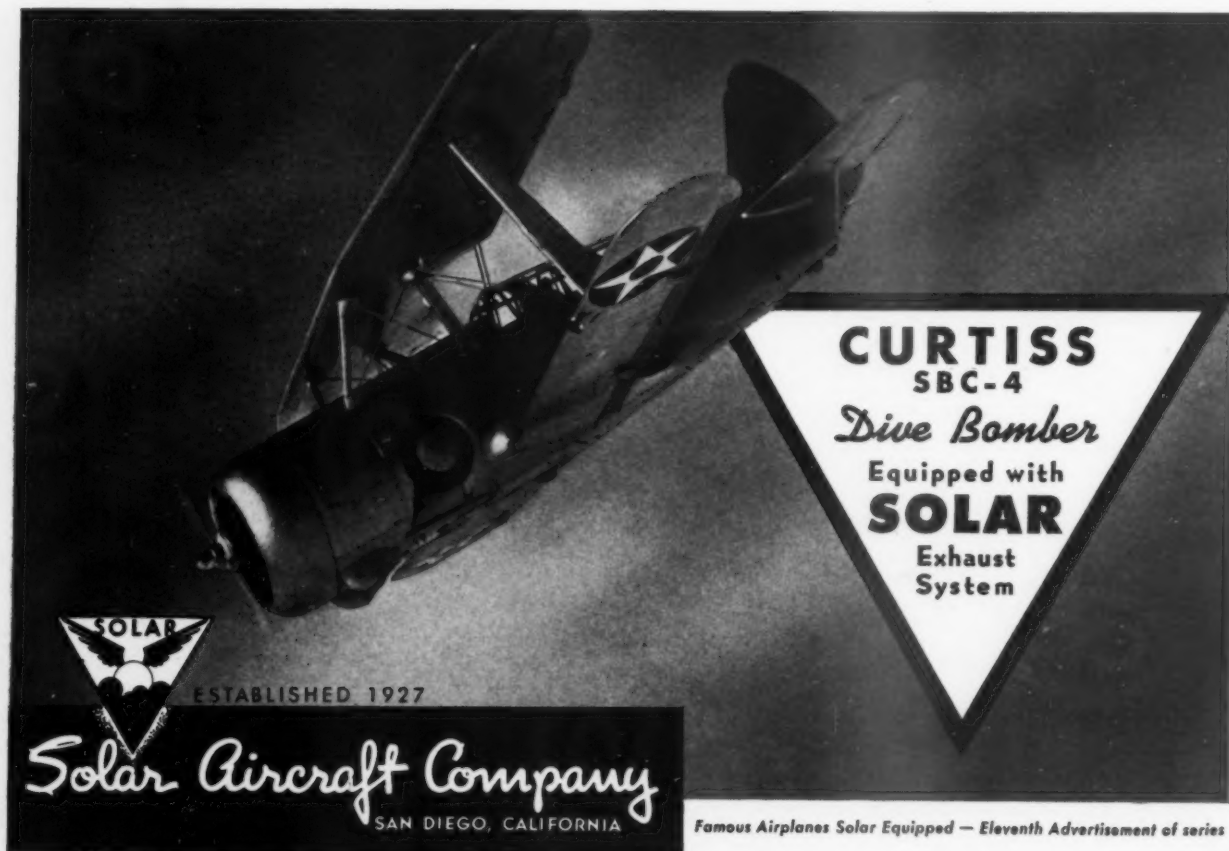
Dr. Julius C. G. Seidl, professor of industrial engineering and head of the Engineering school of **Manhattan College** has resigned to join the industrial relations staff of **Ranger Aircraft Engines** as director of training.

William Kenneth Ebel, vice-president in charge of engineering of the **Glenn L. Martin Co.**, has been awarded the degree of Doctor of Engineering by **Case School of Applied Science**, Cleveland.

Nicholas S. Ludington has resigned as a director of **National Aviation Corp.**, to join the **Navy Department** in Washington. **Casey S. Jones**, president of the **Casey Jones School of Aeronautics, Inc.**, will succeed Ludington.

V. I. Montenyohl, vice-president of the **B. F. Goodrich Co.** for the past 35 years, has resigned because of ill health, it was announced by President **John L. Collyer**.

A. J. Baker, formerly production manager of the **B. F. Goodrich Co. Industrial Products** division has been named full-time administrator of the company's **War Production** committee. The announcement was made by **J. B. Hanan**, committee chairman.



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SOLAR
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Piano Industry Joins Forces In War Production

ANOTHER highly skilled American craft is throwing its resources into the nation's war production effort—this time the piano manufacturers, who are preparing to convert immediately a large section of their industry for the manufacture of military aircraft parts.

Already leased for the duration include plants, machinery, administrative and operating personnel of Wm. Knabe & Co., Chickering & Sons, and the Mason & Hamlin Co., all under contract with the Universal Moulded Products Corp., which has large contracts with the manufacturers of aircraft for the Canadian and American governments.

Announcement of the transaction was made from the office of Arthur J. Pew, Jr., vice-president and director of the Sun Oil Co., and owner of the controlling interest in Universal Moulded Products.

Precision machinery available in the piano industry will be of particular value it was pointed out, since that equipment is well adapted to the requirements of aircraft manufacture.

All War Industry Civilian Guards Taken Into Army

Arrest of Nazi agents and subsequent discovery of organized efforts to cripple U. S. war production plants resulted in immediate action on the part of the Army to bring all civilian guards under its immediate supervision.

Orders to this effect were announced in Washington by Lt. Gen. Brehon B. Somervell, Commanding General, Service of Supplies, who said that the regulation would extend to more than 11,000 industrial plants, including those engaged in the manufacture of warplanes.

Under the new plan, civilian guards will be sworn into an auxiliary unit of the Army's military police corps and be commanded by members of the regular Army. Special training will follow immediately upon reorganization, with the intent of equipping all guards with a thorough knowledge of how best to cope with spies and saboteurs.

A Million-Dollar Smile

A million dollars in cash, in lieu of the usual vacations, has been distributed among Curtiss-Wright Corp., employees, thereby assuring uninterrupted production during the coming summer months. Workers received from two days to two weeks' pay, depending on length of service.

Fairchild Officer Heads Al-Fin Corp.

Duncan B. Cox, for 15 years a member of the Fairchild Engine & Airplane Corp. organization and vice-president and member of the

board of directors, has been appointed executive vice-president of the Al-Fin Corp., it was announced by J. Carlton Ward, Jr., Fairchild's president.

Al-Fin, a Fairchild affiliated corporation, is devoted to research and experimental projects in connection

with improved cooling systems for air-cooled motors.

For the past four years Cox was general manager of the Ranger Aircraft Engine division, Farmingdale, L. I. He is being replaced in this office by H. H. Budds, former assistant general manager of the Ranger plant.

**CIVILIANS
MUST FLY TOO!**



Many important "cogs" in America's war-production machine are men like John Smallplant, who, yesterday, made doorknobs... today, makes a precision gadget for bombers. He, and many others like him, are able to transact essential business and hurry back to their production lines, because of airline service. If you are one of them, help us to do our war job by observing the accepted etiquette of war-time air travel: 1. Don't be a "no-show," and waste a needed seat. 2. Travel light to conserve load capacity. 3. Check in early at the airport. 4. Don't rely on hearsay. Phone us for official information.



WESTERN AIR LINES

★ General Traffic Office—510 West Sixth Street, Los Angeles, California

—MANUFACTURING

Industrial Powers Join Forces to Speed Output

FORGING ANOTHER LINK in their common effort to expedite war production, two powerful American industries—the automotive manufacturers now engaged in making aircraft, and the plane manufacturers—have announced formation of a joint transportation unit to be known as the Aircraft War Traffic Conference.

Purpose and sole objective of the conference, according to the announcement, is to speed war production by expediting the solution of aircraft transportation problems. It will serve as a clearing house for research, interchange of experience, technique and information on all kinds of aircraft traffic, loading and shipping, rates, classification, bills of lading, routing and other transportation factors.

The conference will also present the views of manufacturers to interested government agencies and freight carriers, work with the Army Air Forces and the Naval Bureau of Aeronautics and other governmental agencies in advancing the war traffic effort.

Mobilization of the war traffic activities of the aircraft and "automotive" industries has been endorsed by the Under Secretary of War, the Army Air Forces and the Chief of Transportation, War Department, spokesmen for the industrialists said.

Member Companies

Automotive—aircraft manufacturers affiliated with the Automotive Council For War Production, which are members of the Aircraft War Traffic Conference are: Anderson Company; Bendix Products Div. Bendix Aviation Corp.; Briggs Mfg. Co.; Checker Cab Mfg. Co.; Chrysler Corp.; DeSoto Div., Chrysler Corp.; Plymouth Div., Chrysler Corp.; Crosley Corporation; Ford Motor Company; Buick Motor Div., General Motors Corporation; Cadillac Motor Div., General Motors Corp.; Chevrolet Motor Div., General Motors Corporation; Fisher Body Div., General Motors Corp.; Graham Paige Motors Corp.; Hudson Motor Car Co.; McQuay-Norris Mfg. Co.; Murray Corp. of America; Nash-Kelvinator Corp.; Packard Motor Car Co.; Reo Motors, Inc.; The Studebaker Corp.; Thompson Products, Inc.

Charter members of the Aircraft Conference from the aviation companies are: Beech Aircraft Corp.; Bell Aircraft Corp.; Bendix Aviation Corporation; Consolidated Aircraft Corp.; Continental Motors Corp.; Curtiss-Wright Airplane Division; Douglas Aircraft Co.; Fleetwings, Inc.; Goodyear Aircraft Corp.; Guiberson Diesel Engine Co.; Lockheed Aircraft Corp.; Lycoming Div.,

The Aviation Corporation; McDonnell Aircraft Corp.; Menasco Mfg. Co.; North American Aviation, Inc.; Northrop Aircraft, Inc.; Platt-LePage Aircraft Co.; Republic Aviation Corp.; St. Louis Aircraft Corp.; Vega Aircraft Corp.; Vultee Aircraft, Inc.

Kenneth A. Moore, Manager of the Traffic Division of the Automotive Council for War Production, also has been appointed Manager of the Aircraft Traffic Conference.

Members of the Executive Committee of the Conference are: E. W. Dunn of Bell Aircraft Corp.; W. F. Gleason of Bendix Products Division of Bendix Aviation Corp.; E. R. Terry of Briggs Manufacturing Co.; N. J. Brennan of the Chrysler Corporation; G. E. Winters of Continental Motors Corp.; Mr. Goehausen; O. A. Johnson of Ford Motor Co.; C. R. Scharff of General Motors Corp.; Mr. Sullivan of General Motors Corp., H. J. Carroll of Goodyear Aircraft Corp.; F. A. Allen of Hudson Motor Car Co.; William Shulver, Jr. of Lockheed-Vega Aircraft; A. R. Bubb of Lycoming Division of The Aviation Corp.; J. A. Gardner of Murray Corporation; J. H. Moulton of Republic Aviation Corp.; and W. G. Wilson of Vultee Aircraft, Inc.

List of Committees

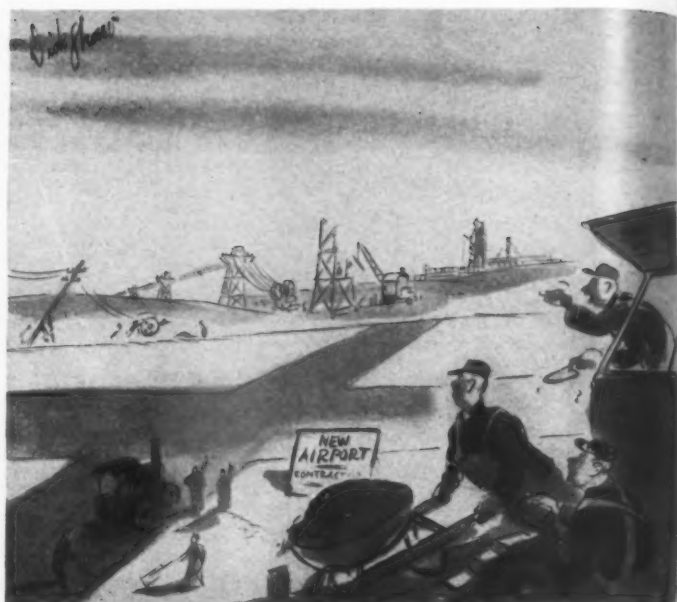
Members of Advisory Committees were appointed temporarily as follows:

Aircraft and Aircraft Parts—Mr. Dunn, Mr. Wilson, Mr. Johnson, and Mr. Shulver.

Aircraft Engines—H. A. Hatch of the Wright Aeronautical Division of Curtiss-Wright Corp.; Mr. Winters, Mr. Scharff, Mr. Brennan and Mr. Bubb.

Propellers—A. H. Bechtel of Nash-Kelvinator; G. D. Spencer of American Propeller Corp.; J. Hubert of Curtiss-Wright, Propeller Division, and D. B. Clark of the Aeroproducts Division of General Motors.

Miscellaneous Parts—Mr. Gleason; F. C. Partlan of Crosley Corp.; Mr. Terry; J. W. Peters of the Delco-Remy Division of General Motors, and R. J. Howard of the Philadelphia Division of Bendix Aviation.



"Here They Come, Fellows."

Working committees appointments (temporary) follow:

Engineering Loading Committee—G. W. Rydner of Fisher; E. J. DeHart of Lockheed; E. H. Malley of Curtiss-Wright; James Cave of Murray; V. A. Johnston of Briggs; Mr. Moulton; M. R. Leslie of Ford; H. L. Keller of Buick; R. R. Brown of Chevrolet; and W. B. Corbett of Chrysler.

Bills of Lading and Routing—Graham Smith, McQuay-Norris Manufacturing Co.; Mr. Carroll, Mr. Gardner, E. E. Swartz, Nash-Kelvinator; Mr. Allen, and C. P. Shropshire of Vultee.

Rates and Classification—F. S. Norton, Fisher; Mr. Shropshire; A. H. Banks of Bell; J. D. Masters of Lockheed; Elmer Shultz of Chrysler; E. F. Stewart, Chevrolet; Mr. Gleason; James Howe of Ford; and Mr. Moulton.

Attendance List

At the two-day organization meeting, held in the Recess Club, Detroit, were: Capt. L. J. Kelly (Army Air Forces), Detroit, Mich.; and Messrs. Nielsen (Army Air Forces), Washington, D. C.; Bubb (Aviation Corp.), Williamsport, Pa.; Gleason (Bendix), So. Bend, Ind.; Howard (Bendix), Philadelphia, Pa.; Dunn (Bell Aircraft), Buffalo, N. Y.; Terry (Briggs Mfg.), Detroit; C. Clark Smith (Buick), Flint, Mich.; Scharff and Stewart (Chevrolet), Detroit; Brennan (Chrysler), Detroit; Winters (Continental Motors), Detroit; Goehausen (Curtiss-Wright), St. Louis, Mo.; Sullivan and Norton

Inland Warplant Plans Announced

Continental Aviation & Engineering Corp. has announced plans for a new aircraft engine plant to be built in Michigan, where the company will go into volume production on war contracts.

President C. J. Reese said the structure would be the largest wood-truss building erected in the state in many years, being specially designed to make use of substitutes for critical materials throughout. Designed by the Russell Engineering Corp., Detroit, the plant will use materials which steel and reinforced concrete displaced as far back as 40 years ago, but will be of modern design and the last word in production efficiency, Reese said.

(Fisher Body), Detroit; Johnson (Ford), Dearborn, Mich.; N. K. VanOsdol (Guiberson Diesel Engine Co.), Detroit; Allen (Hudson), Detroit; Smith (McQuay-Norris), St. Louis, Mo.; Gardner (Murray Corp.), Detroit; F. J. Mooney (Nash-Kelvinator), Milwaukee, Wis.; Moulton (Republic Aviation), Farmingdale, N. Y.; F. T. Felix (Studebaker), So. Bend, Ind.; Wilson (Vultee), Downey, Cal.; Shropshire (Vultee), Nashville, Tenn.; George W. Romney, K. A. Moore, H. V. Hadley, and G. L. Middleton of the Automotive Council for War Production, Detroit, Mich.

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DELIVERIES...WRITE
OR WIRE FOR DETAILS
OF OUR FACILITIES

EXHAUST COLLECTORS

AND OTHER STAINLESS STEEL AIRCRAFT COMPONENTS

SHEET ALUMINUM FABRICATION • TANKS • COWLING • ETC.

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SPECIALIZING IN SERVING
THE PRIME CONTRACTOR



OUR APOLOGIES, LIEUTENANT!

THOSE weren't ordinary tires you were brake-testing on that bomber, but U. S. Royals with new block tread. We feel sorry as anything about those missing front teeth.

But those things happen. Maybe that tread, and those tests—yes, and even your broken teeth—will help to save plenty of planes and pilots in the future when you and your buddies are setting down hotter and hotter ships on small landing fields.

This fast-stopping U. S. Block Tread was designed primarily to meet a demand for effective brake action treads on military airplane tires. Now it is available on all types of U. S. Royal Airplane Tires. Hundreds of tough Tempered Rubber blocks with sharp biting edges prevent both forward and side skids on concrete and unimproved dirt surfaces. We're warning pilots right now that it stops—*quick*.

ONLY "U. S." BUILDS THESE EXTRAS INTO EVERY AIRPLANE TIRE

TEMPERED RUBBER TREAD—A tougher, scuff- and heat-resistant tread compound for airplane tires.

SAFETY BONDED RAYON CORD—A lighter, more resilient, airplane tire material with tremendous impact resistance and stamina at high temperatures.

STATIC GROUND CONSTRUCTION—Conductive rubber construction grounds static electrical charges upon contact with the ground. This safety feature is available in every U. S. Royal Airplane Tire.

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FIELD AIRPLANE TIRE SERVICE—A force of "U. S." field engineers in every part of the country is promptly available for engineering and technical help on tire and undercarriage problems.

U. S. ICE GRIP TREAD—A tread of revolutionary design and performance for snow and ice-covered landing surfaces.



RAYON IN EVERY TIRE—A TIRE FOR EVERY PLANE



UNITED STATES RUBBER COMPANY

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—MANUFACTURING

Aircraft Industry Hits Stride of 50,000 Battle Planes a Year

Old Line Firms Attain Goal In Record Time

THE nation's established aircraft industry, without outside help, has reached an output rate of 50,000 military aircraft a year, the Aircraft War Production Council announced in Los Angeles early in July. The report was based on June production figures.

Two years ago when President Roosevelt expressed the desire that the industry attain this goal, the general public and many officials in other industries declared the request was fantastic and impossible. The industry said it could be done. The President later increased the figure to 60,000 for 1942 and 125,000 for 1943.

The President himself broke war precedent June 26 and revealed that May airplane production was "nearly 4,000." He also gave results of the month's work in tanks, guns, machine guns, and the like.

"We are well on our way towards achieving the rate of production which will bring us to our goals," he said.

Donald Nelson, WPB czar, a few days later answered those who doubt if the materials problem will permit the aircraft industry to meet next year's goal. He said: "The government currently is setting up facilities to meet the quota of 125,000 planes next year. If we can believe our statistics, we will have enough material to do it. The problem is to get that material in and synchronize it with production, so that we do not have lags; high inventories in places where they are not needed and shortages where the materials are needed."

Col. John H. Jouett, president of Aeronautical Chamber of Commerce, on the day of the President's announcement, told the press that the aircraft industry increased its annual production rate of warplanes almost 1000% in 25 months.

"When the President, in his address to Congress May 16, 1940, called for annual production of 50,000 planes, the industry was producing at an annual rate of 4,500," he said. He recalled that plane production at the outbreak of the war in September, 1939, was at an annual rate of 3,000, thus giving the industry credit for a gain of 1,500% since that date.



Unwholesome: The Tokio Kid is very unhappy as a Santa Monica citizen tosses in an old tire for the scrap rubber drive. Douglas Aircraft Co. erected the Kid on a downtown corner in Santa Monica.

New Wind Tunnel Completed Soon

A HUGE WIND TUNNEL capable of producing an airspeed of 327 mph is nearing completion at the west coast plant of the North American Aviation, Inc., officials announced recently.

The new tunnel, designed so that the air will flow through in straight lines without eddying or burbling, develops an air speed equal to actual flight cruising speed of the fastest planes.

The tunnel part of the new installation is in essence a large, continuous tube built around a rectangle. The tunnel, itself rectangular in cross section, narrows to a throat 7 and 3/4 ft. high and 11 ft. wide.

The propeller is turned by a 3,000 hp. electric motor mounted in a nacelle within the tunnel. Speed of the propeller can be regulated between 70 and 700 rpm from the control room. The air leaving the propeller passes halfway around the tunnel, which gradually increases in size, until it reaches the throat where the sudden contraction in tunnel size increases the speed of flow to as much as 327 mph at maximum power. Between the throat and the power system, the tunnel gradually increases in size again, the design eliminating eddies and burbling in the air flow. Specially designed vanes guide the air current around square corners in the tunnel and because of the tremendous friction, some of these vanes are equipped with water cooling devices to reduce the heat and also to maintain a uniform temperature necessary for accurate tests, engineers explained.

The test area is visible from both the control room and the computing room, a feature lacking in some of

Army Solves Gas Problem To Keep Workmen On Job

EXCLUSIVE privileges are being enjoyed in these days of gasoline shortages by the aircraft workers employed in the neighborhood of Bendix, N. J.

It all came about when the Army Air Forces learned that some 200 men were unable to report for work one morning recently when neighborhood filling stations ran dry.

Immediate solution of the problem was ordered, resulting in five filling stations along the direct route to nearby aircraft plants being designated as exclusive refueling spots for aircraft factory workers employed by Bendix Aviation Corp., and Air Associates, Inc.

The order does not increase amounts of gasoline available to each customer, and each must present his factory identification card before he can make a purchase. Similar arrangements will be made soon, it was learned, for Wright Aeronautical Corp., workers in the Paterson-Passiac area.

H. J. Heinz Co. Starts Work On War Contracts

DIVERSION of the plant facilities and manpower of the H. J. Heinz Co. to the production of airplane parts is now underway at the company's western Pennsylvania plant, according to word released by H. J. Heinz II, president.

Some factory equipment, the announcement said, was immediately adaptable to specialized work, particularly the manufacture of plywood aircraft parts. Specific details of the project were guarded as a military secret, but it was indicated that large scale production would soon be realized.

One of the company's machine shops already is operating nearly 100% on war materials subcontracts.

the earlier models. Planes to be tested are lowered directly into the test chamber from the shop in which they are made. These models, chiefly made of wood, are constructed to exact scale and although they do not fly are equipped with electric motors which power the scale model propellers, thus enabling engineers to determine effect of the propeller air stream at various engine speeds.

Also on the second floor of the tunnel building is space for conducting full scale radiator and duct tests. The building and the tunnel proper will be completed shortly, but the tunnel will not go into operation until this fall.



Announcing the Type "RA" Unit

Another Example of Whiting's Specialized Service

The new Type "A" Unit is a simplified device for holding radial engines in an easily accessible position during the assembly of the engine accessory section. Important features are the rotating ring clamp which permits turning the engine about the crankshaft axis to any desired position, and the modern streamlined design which provides 100% accessibility to any part of the accessory section.

Whiting products include service-tested matched maintenance and handling equipment—metal working machines—cranes and hoists. Whiting engineers develop new devices to customers' specifications, and the research staff is equipped to work with you in solving your equipment problems.

WHITING CORPORATION • Aviation Department
Main Office and Plant: 15699-B Lathrop Ave., Harvey, Ill.
(Chicago suburb)
Western Office: 6381 Hollywood Blvd., Los Angeles, Calif.
(Phone: Gladstone 9413)

WHITING

Aviation Department



for 1

The rotor is the heart of every Sperry gyroscopic instrument. In that sense it is the heart of every combat plane.

To produce them faster, Sperry engineers have invented and developed a remarkable machine, the Sperry Strobometric Balancer. With it, rotors are now endowed with perfect dynamic balance eight times faster than before—and in $\frac{1}{8}$ th the floor space!

The reason this country's production is ahead is the same one which is now beginning to show on the fighting front—superior American ingenuity.

Among Sperry products playing a vital role in the war effort are the Gyro-Compass, Gyro-pilot, Directional Gyro, Gyro-Horizon and Anti-Aircraft Searchlight.



SPERRY GYROSCOPE COMPANY, INC.

BROOKLYN, NEW YORK

R E S E A R C H S P E E D S W A R P R O D U C T I O N

WHEN FIRE GRIPS
YOUR ENGINE . . .



BLAST IT OUT
WITH SNOW-AND-GAS!

JUST PULL
A HANDLE!

YOU'RE in the air. Suddenly your engine trails smoke. A flame streaks. Fire!

What can you do about it? The answer's simple—if your plane is equipped with a built-in Kidde extinguishing system!

Just reach for a handle. Give it a pull. Out goes the fire. Time: 3 or 4 seconds!

That's how quickly and easily a built-in Kidde system kills engine fires in the air—or on the ground. Engineered for sure-fire operation, a Kidde system

makes full use of Kidde carbon dioxide snow-and-gas—aviation's fastest extinguishing agent. Kidde gas smothers fire with brutal efficiency. Yet it harms nothing but fire. Clean, dry, Kidde gas evaporates into thin air after its fire-killing job is done!

There are built-in Kidde systems for both multi-motored and single motor planes, for radial or "in-line" engines. Kidde flame detectors are available for use as actuating elements of completely automatic fire-fighting units.

Write for complete details.

Kidde



Walter Kidde & Company, Inc.

739 WEST STREET, BLOOMFIELD, NEW JERSEY

On the Labor Front

BELLANCA AIRCRAFT CORP., New Castle, Del.

President R. J. Thomas of UAW-CIO requested that WPB Chairman Nelson investigate charges that company has "virtually ceased operations." Thomas who said the plant formerly employed 2,500, attributed "gradual shut-down to a conflict" between G. M. Bellanca and financial organizations.

CHARLES S. BREMAN & SONS CO., Chicago, Ill.

Aluminum Workers of America report an agreement providing for an increase in wages of 25c per hour, vacations with pay, union shop, and check-off.

CHEVROLET MOTOR DIVISION, GMC., Detroit, Mich.

United Protective Workers of America certified by NLRB for plant protection employees.

CHRYSLER MOTOR CO., Detroit, Mich.

Demands for \$1-a-day wage increase and union privileges certified to NLRB. Mediation hearings to start July 15.

CRITTALL-FEDERAL SASH CO., Waukesha, Wis.

Preliminary hearings were conducted by Prof. Rice from June 4 to June 7. They reconvened July 7.

CURTIS-WRIGHT CORP.

Close vote at NLRB election makes stalemate. Of 4,987 eligible to vote, 1,468 voted for IAM-AFL; 1,468 for UAW-CIO; 1,303 no union. Mrs. Herrick, NLRB regional director, had previously ordered Propeller Craft, Inc., an independent union to withdraw. A threatened strike preceded the election.

DUNLOP TIRE & RUBBER CO., Buffalo, N. Y.

Election for bargaining representation won by United Rubber Workers-CIO.

ELECTRIC AUTO-LITE CO., Bay City, Mich.

NLRB has certified UAW-CIO as bargaining agent for production and maintenance employees.

ELECTRIC STORAGE BATTERY CO., Philadelphia, Pa.

Hearings held June 25 were adjourned after one day. Will resume July 10.

FISHER BODY AIRCRAFT, Memphis, Tenn.

NLRB has certified UAW-CIO as representative; 1,358 voted for UAW-CIO, 449 against.

FLOYD BENNETT FIELD, New York City.

Edwin E. Witte, NWLB special arbitrator, ruled in favor of United Telephone Organization, independent union.

FORD BOMBER PLANT, Willow Run, Mich.

Employees' demand for \$1-a-day wage increase, union shop, check-off certified to NWLB. At request of Board the Ford Company extended their employment contract for one month. NWLB mediation hearings begin July 13.

GENERAL TIRE & RUBBER CO., Akron, Ohio

Strike called because men refused to work alongside 25 aliens reinstated after having been laid off after Pearl Harbor. Return to work after agreement to put aliens in separate groups and transfer displaced workers to other departments.

B. F. GOODRICH CO., Akron, Ohio

NWLB hearings begin July 8th.

INDIANAPOLIS DROP FORGE CO., Indianapolis, Ind.

International Die Sinkers Conference certified as bargaining agent by NLRB.

LOCKHEED AIRCRAFT CORP., Burbank, Calif.

Company and IAM-AFL representatives held informal meeting arranged by NLRB as preliminary to hearings of charges of unfair labor practices made by union.

NATIONAL AIRCRAFT EQUIPMENT CO., Los Angeles, Calif.

Employees vote for IAM-AFL as bargaining representatives.

NORMA-HOFFMANN BEARINGS CORP., Stamford, Conn.

NWLB hearings reconvened June 25th and wage investigation is now pending.

NORTON CO., Bauxite, Ala.

Aluminum Workers of America won election for employees' union representation.

REYNOLDS METALS CO., Richmond, Va.

Preliminary NWLB hearings scheduled July 8th in Richmond.

JOHN A. ROEBLING'S SONS CO., New Jersey

NWLB is awaiting further statements from parties before setting date for hearing. Jesse Feidlin, NWLB mediator, is conducting preliminary conference.

SEALED POWER CORP. and **ACCURALITE CO.**, Muskegon, Mich.

NLRB orders election this month to vote for or against representation by UAW-CIO.

FRED A. SNOW CO., Chicago, Ill.

Company is ordered by NLRB to cease discouraging membership in UAW-CIO.

STANDARD TOOL CO., Cleveland, Ohio.

Mediation hearings that started June 30th were recessed because of illness of one party.

UNION PARTS MANUFACTURING CO., Brooklyn, N. Y.

NLRB orders election held this month for employees to choose between IAM-AFL and UAW-CIO for union representation.

VULTEE AIRCRAFT, INC., Vultee Field, Calif.

Case still on new case file at NWLB and will probably be delayed until after the wage stabilization conference.

WEATHERHEAD CO., Cleveland, Ohio.

Saul Waller, NWLB mediation officer, is conducting a preliminary investigation in Cleveland.

Girdler Forecasts More Steel Planes

Rapidly growing importance of stainless steel in aircraft manufacture is forecast by Tom M. Girdler, chairman of Consolidated Aircraft Corp., but plywood does not loom as an important element in big ship construction, he says.

Stainless steel, however, will find its most advantageous use in large

craft, the industrialist believes. Beryllium alloys can not be considered for aviation uses for some time.

Stainless and low alloy steel research has been underway for years, with Edward G. Budd Manufacturing Co. and Fleetwings, Inc., the leaders in this phase of development. The Budd Co. is preparing plans for wide use of steel for aviation. Fleetwings produced a trainer of this material before the U. S. entered the war.

Brazil To Abandon Nazi Airplanes For Fairchild's

ANNOUNCEMENT that the Brazilian government has signed contracts for large scale manufacture of American Fairchild airplanes in its South American plants to replace German craft formerly made for the Brazilian Air Forces was made in this country June 21.

Details of the negotiations, calling for quantity production hitherto unequalled in a foreign country, were released by the Brazilian embassy and Richard S. Boutelle, vice-president and general manager of the Fairchild Aircraft Division of Fairchild Engine and Airplane Corp., at Hagerstown, Md.

The Brazilian government expects to proceed immediately with construction of the trainers at its South American factory, the output to supplement large purchases of Ranger powered Fairchild PT-19 primary trainers and the Fairchild 24 liaison cabin model, both extensively used by the Royal Air Force and the U. S. Army Air Forces as a cargo and personnel transport ship.

The deal was negotiated by Boutelle through A. R. Stecker, Fairchild director of overseas relations and Dr. George Pedro Salgado Filho, Brazilian Minister of Aeronautics.

Maj. Agemar da Rocha Sanctos, technical director of his government's aircraft factory and Chief Engineer Rebello are now in Hagerstown studying plans, specifications and manufacturing methods, expecting to return to Brazil shortly.

All-Brazil Job

For the first time the entire manufacture, including jigs, and tools, will be carried out in Brazil, where the government aircraft factory is well equipped. Boutelle, in discussing the contract, pointed out that, through this advanced skill and experience in manufacture available in Brazil, the bottleneck in the United States on machine tools, skilled personnel and some materials would be greatly relieved.

"I am confident," Boutelle said, "that our Brazilian friends will do a splendid job. It is a source of great satisfaction to us, as North Americans, that the manufacture of these airplanes will replace the manufacture of these airplanes will replace the manufacture of the Stiglitz and Focke-Wulf trainers and the Focke-Wulf twin-engine plane that have hitherto been made in the Brazilian government aircraft factory."

Col. Ararigboia, air attache of the Brazilian embassy, in the course of his representations to the State Department, through which the contract was cleared, stated of the Fairchild planes:

"We have chosen the Fairchild cantilever, low wing monoplane trainer because we find that the United States Army Air Forces are attaining the very best results through the use of this trainer, be-



Yankee Product Best: Maj. Nero Moura, Brazilian Air Force and Maj. Miguel Lampert, chief of the Brazilian Aeronautical Mission to U. S., shown during test trials of the Fairchild PT-19, which will be manufactured in large quantities in the South American country, replacing German planes hitherto made for the Brazilian Air Force.

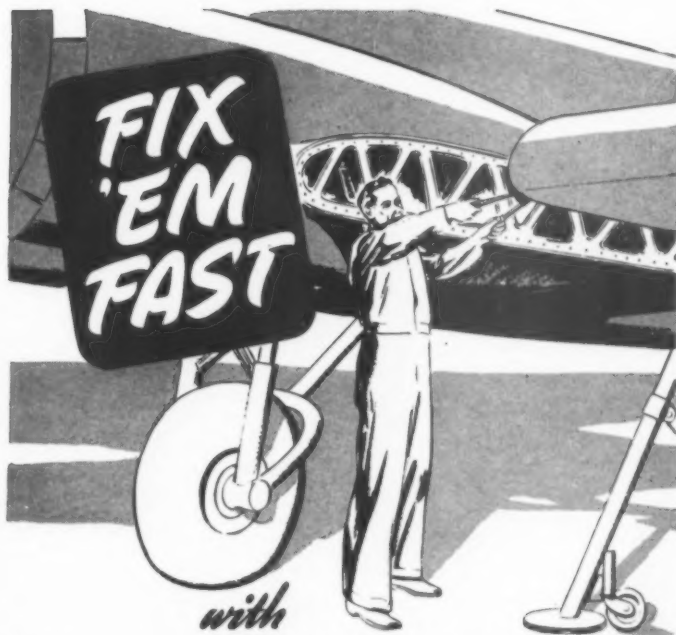
cause its general design and flying characteristics make the transition to low wing monoplane trainers and tactical ships of advanced type very much easier. We expect not only that the Brazilian Air Force will standardize on this trainer, but that it may be extensively used elsewhere in South America. The result will be that pilots thus trained may be more closely co-ordinated with similarly trained North American pilots."

Give 3 Bombsights

Employees of the Carl L. Norden Co., Inc. presented three bombsights to the U. S. Navy and Army Air Forces in a ceremony held in the company's New York City plant June 30. The bombsights were made by the workmen on their own time from materials furnished by the company.

Buick Enlarges Classes

Weekly enrollment of soldier-students from the Army Air Forces' Technical Training Command at the Buick school, Flint, Mich., has doubled in recent weeks and soon will reach capacity schedule, according to Director W. F. Hufstader. Several hundred Army ground personnel are now enrolled in the concentrated shop practice program designed to turn out the men well equipped in the knowledge of servicing and repair aviation engines.



Cherry Blind Rivets

The Cherry Rivet is a mechanical blind rivet made of aluminum alloy and is designed for the inaccessible spots in modern aircraft...the double-surface structures where access to both sides of the work is impossible.

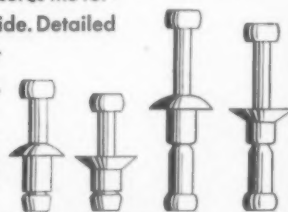
RIVETS APPLIED RAPIDLY

Such blind spots occur frequently in new structures and apply to nearly all riveting jobs in a completed ship. Consequently Cherry Blind Rivets are ideal for salvage work on airframes or for routine servicing on commercial or combat ships. Simply drill out the old rivet and apply an over-size Cherry Rivet which has high shear and fatigue values.

HAVE EXCELLENT CLINCHING ACTION

Cherry Rivets are true rivets through which passes a double-headed mandril. They can be applied with either hand-operated or power gun which pulls on the mandril and pushes on the rivet head. As the mandril is pulled through the rivet it forms a tulip head on the blind side, expands the shank and permanently plugs the rivet. This positive mechanical action assures the formation of a satisfactory head on the blind side. Detailed information on Cherry Rivets and their application will be furnished on request.

From left to right, the hollow type with brozier and counter-sunk heads—the self-plugging type with both styles of heads.



MANUFACTURED UNDER U.S. PATENT NO. 2,183,543

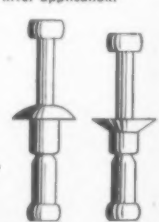
Cherry Rivet

Company
LOS ANGELES, CALIFORNIA
© 1948 C.R.C.

The G-10 Ratchet-type Hand Gun is a highly practical tool for use when compressed air is not available.



The G-15 Pneumatic Gun is the most efficient for all-round Cherry Rivet application.



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Industry Reported Working on Cargo Planes With Capacity of 2 Boxcars

Are Far Beyond Drafting Stage, Publication Says

EVEN MORE spectacular cargo planes than the Douglas DC-4 (Army's C-54) "are far beyond the drafting stage not only at Douglas but elsewhere," according to the latest issue of the company's house organ, *Airview*.

Most startling revelation made by the publication was that one plane in particular will have at least double the 62,000-lb. gross weight of the four-engined C-54.

This would give the ship the weight-carrying capacity of two standard railroad boxcars.

"Douglas engineers say that 100 of these could perform the work of 206 of the C-54s and have the utility of 510 C-47s," the story said.

Noting that Generalissimo Chiang Kai-Shek recently said that if he had 100 DC-3s the Japs could have the Burma Road, the publication stated: "On this basis, just 20 of these projected behemoths would,

through their great carrying capacity and speed differential, more than suffice the great Chinese leader."

Air Forces officers in Washington refused to elaborate on the story.

Discussing the C-54 at length, the publication gave some interesting facts justifying the tricycle landing gear. "To the uninitiate," it said, "the tricycle landing gear of this plane might be criticized for the resulting height of the cabin floor above ground. However, proper cargo handling equipment readily overcomes the slight disadvantage."

"On the other hand, there is even a great advantage in this height, aside from the inherently desirable landing characteristics typical of the tricycle-geared transport."

"Such height, not attainable with conventional landing gear, permits the plane to straddle and carry, suspended from the belly, items of heavy equipment like tanks and guns whose sheer size and weight makes them impractical cargo inside the cabin."

"Another important factor in favor of the external suspension of heav-

ier equipment is that in time saved loading and unloading. Units can be carried completely assembled with further saving in time over knocked-down equipment carried inside which must be re-assembled on arrival at a destination.

"Also capable of being carried externally by the C-54, either intact or in partially knocked-down form are mechanized equipment and field pieces."

"Cabin dimensions are such that it has approximately the equivalent in weight carrying capacity of the standard railroad box car. This coincidence suggests the striking comparison that one Douglas C-54, with a cruising speed at 60% throttle approximately 15 times as great as the average hourly progress of the box car across the country, would equal in transport efficiency a 15-car train."

"Although development of the C-54 has been governed solely by military necessities it would be idle to deny that its post-war potentialities have been overlooked. That however, is another story and one not to be written until the war is won."

AAF Relaxes Ban on Publication of Financial Reports

THE ARMY AIR FORCES has somewhat relaxed its ban on publication of quarterly financial reports to permit continued publication of such reports by firms doing the biggest part of their work for contractors other than the Air Forces. Protests resulted in revision of the original ruling which provided that all contractors to the Air Forces withhold their quarterly reports for the duration.

Text of the latest Air Forces statement is as follows:

"1. Policy Bulletin No. 5, Public Relations Division, Headquarters Army Air Forces, Washington, is amended to read as follows:

"War Department requests that contractors to the Army Air Forces, engaged in the manufacture and/or assembly of military aircraft, whose contracts with the Air Forces amount to 33-1/3 percent or more by dollar value with relation to their total dollar value of all War contracts refrain from making public quarterly financial reports."

"2. Nothing in Paragraph 1, shall be construed as prohibiting any contractor to the Army Air Forces from furnishing the Securities and Exchange Commission financial information required by law. When the information required conflicts with current War Department security policies the pertinent information which so conflicts should be marked 'Confidential.' (See Rule X-24B-2, General Rules, Securities and Exchange Commission)."

More Patents Seized

Japanese, Italian and Hungarian owned patents were included in the latest seizure list released by Leo T. Crowley, alien property custodian. More than 750 enemy-owned patents were recorded in the order, among them about 200 patents of the I. G. Farbenindustrie not previously vested.

Additional vesting orders announced by the custodian included the seizure of control of J. M. Lehmann Co. Inc., of New York; the Adlanco X-Ray, Corp., of New York; Ergen Corp., New York, and also the German held interests in the estate of Anna M. von Zedlitz.

Incorporations

New York—C. M. Keys Aircraft Service Inc., New York; aircraft of all kinds; \$1,000. Guthell, Appleby, Osterhout & Mills, 630 5th Ave., New York.

Oklahoma—Sooner Air Training Corp., Oklahoma City; \$100,000. John H. Burke, W. R. Fenner, Rex H. Holden, Oklahoma City.

Oklahoma—Southern Aviation Inc., Oklahoma City; capital stock increased from \$3,000 to \$24,000.

Oklahoma—Tipton Aircraft Co., School Division, Oklahoma City; \$10,000. G. W. Tipton, B. J. Page, R. C. Robinson, Oklahoma City.

THE EDWARD G. BUDD MFG. CO. has obtained an additional loan of \$3,900,000 from the RFC to finance expansion of war work facilities. With this new loan Budd Mfg. Co. loans are in the neighborhood of 15 million dollars, mostly from RFC and Philadelphia banks.

Boeing Airplane Co.

Directors of Boeing Airplane Co. declared a dividend of \$1, payable on July 23 to stock of record July 1. This is the first payment of the issue since an initial dividend of 40c was disbursed on Dec. 8, 1937.

Aero Supply Mfg.

THE AERO SUPPLY Mfg. Co. recently voted a dividend of 15c a share on the class B. stock. A similar amount was paid in April. Last year stockholders received 30c in June and 50c in December.

Beech Aircraft Corp.

BEECH AIRCRAFT CORP., reporting on the six-month period to March 31, shows a net profit of \$682,734, equal to \$1.71 each for 400,000 shares. A similar period for 1941 showed a net loss of \$92,649.

TCA Curtails Flights

Trans-Canada Air Lines is now operating two round trips daily between New York and Toronto instead of three. The company said that the curtailment was necessary to meet war requirements.

ADAPTABILITY



...never more necessary than now

Modern war is a war of movement. Theatres of conflict change constantly . . . requiring altered tactics and new strategies, adapted to changing conditions. And changing needs may call for newer, better aircraft. Right now of course—present production is all important. That's why at McDonnell, we're straining every effort, working to the limit of plant capacities in the production of *precision-built* aircraft and parts for our armed forces. But our designers and engineers are also looking constantly to the future . . . working toward tomorrow's needs.

MCDONNELL AIRCRAFT CORPORATION
SAINT LOUIS

Time-Tested

For anti-icing protection of carburetors, windshields and propellers, the ultimate in performance and *design simplicity* is yours with the ADEL Series "K" fluid metering pump. May be obtained with output ranges of from 1.25 to 30 gph per outlet. New, yet time-tested, the Series "K" is predicated upon the same proven design features of ADEL Series "E", "F" and "J" models, the dependability of which has been proven by *five winters of service involving millions of miles of military and commercial operations under every conceivable weather condition thruout the globe.

*Five years—five little drops of time—yet in the realm of aeronautical science this is the equivalent to as many decades of general industrial progress for no other group of engineers is so quick to reject failures, so eager to accept that which adds the least iota of performance.



ENGINEERING OFFICES . . . DALLAS, TEXAS; DETROIT, MICH.; HUNTINGTON, W. VA.; HAGERSTOWN, MD. TORONTO, CANADA.